Oil, Paint and Drug Reporter

Volume 94. No. 14. MONDAY, SEPTEMBER 30, 1918. 100 William St., New York

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Rhatany Root

Resin Scammony,

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ETHYL ALCOHOL
For Manufacturing, Industrial, Scientific and Technical Purposes
DENATURED ALCOHOL

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Offer INC.

TIN TETRACHLORIDE

See Page 17

WEBB'S ALCOHOL

For Manufacturing, Industrial, Scientific and Technical Purposes

The Acknowledged Standard

JAMES A. WEBB & SON, 50 and 52 Stone Street. (Hanover Square) NEW YORK

CHEMICAL EXPOSITION NUMBER, 168 PAGES—PART I, 120 PAGES; PART II, REPORTS OF SESSIONS, 48 PAGES.

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IMPORTANT—The prices in the following pages are for original packages in large quantities, and, unless otherwise specified, represent the spot quotation. When no spot goods are obtainable the word "Nominal" is used. When no quantity is specified for any one item in this table the last-named quality (lb., oz., ton, etc.) prevails. Revised to close of business September 28.

OILS.

Animal Oils.

Degras, American	℔ lb.	25 @	26½
English		Nominal	
neutral		Nominal	
Horse		16½@	17
Lard, prime winter, edible	℔ gal	2.25 @	2.30
non-edible		1.85 @	1.88
off prime		1.72 @	1.76
extra No. 1		1.65 @	1.68
No. 1		1.50 @	1.55
No. 2		1.45 @	1.50
Neatsfoot, 20 degree		3.20 @	3.25
30 degrees		2.70 @	2.75
40 degrees		2.50 @	2.00
prime		1.70 @	1.75
dark		1.50 @	1.60
Oleo, extra	℔ lb.	25 @	25½
prime		24 @	24½
lower grades		21 @	22½
Red elaine		17½@	17½
saponified		17½@	17½
Sod oil		Nominal	
Stearic acid, single pressed		23½@	24
double pressed		24½@	25
triple pressed		26 @	26½
Tallow, acidless	℔ gal.	1.58 @	1.60
prime		1.53 @	1.55

GREASES, LARD, STEARINES AND TALLOW.

Candles, adamantine, 6s, 16 ozs.		19½@	—
paraffine, 6s, 12s, 14 ozs...		15 @	16½
stearic acid, plain, 3s and 6s, 16 ozs		28 @	29
patent ends, 6s, 14 ozs..		25 @	27
cartons, 6 lbs. each—			
plain ends		28 @	—
patent ends		29 @	—
Grease, brown	℔ lb.	16 @	16½
house		16¾@	17
light bone		17¾@	18
white		19¾@	20½
yellow		17½@	17¾
Lard, city steam		27 @	—
compound		22½@	23¾
neutral		30 @	31
Stearine, lard		29 @	29¼
oleo		22½@	23
Tallow, special, loose		19 @	19½
loose, city, prime		18¾@	19½
edible		20½@	21½
vegetable white		17¾@	18¾
green		16¾@	17¼

Fish Oils.

Cod, Newfoundland	℔ gal.	1.45 @	1.50
domestic, prime		1.40 @	1.43
Japanese		1.20 @	1.22
Dogfish, f. o. b. Pacific coast		90 @	—
liver oil, f.o.b. Pacific coast		1.08 @	1.10
Halibut		Nominal	
Herring, f. o. b. Pacific coast		1.15 @	1.20
Menhaden, Northern, crude		1.15 @	1.20
Southern, f. o. b. factory		1.20 @	1.25
dark, pressed		1.30 @	1.35
light, pressed		1.43 @	1.44
yellow, bleached		1.44 @	1.47
white, bleached, winter		1.47 @	1.48
Porpoise, body		Nominal	
jaw		20.00 @	22.00
Salmon, f.o.b. Pacific coast	℔ gal	1.07 @	1.10
Sardine, f. o. b. Pacific coast		1.10 @	1.15
Seal, white		1.55 @	1.60
Shark, f. o. b. coast		1.92 @	—
Sperm, bleached, 38 deg. cold test		2.21 @	2.25
45 deg. cold test		2.18 @	2.20
natural, 38 deg. cold test		2.20 @	2.22
45 deg. cold test		2.15 @	2.17
Tunafish		Nominal	
Walrus oil, f. o. b. coast		1.12½@	—
Whale, No. 1, crude		1.35 @	—
No. 2		1.23 @	—
No. 3		1.15 @	—
Natural winter		1.50 @	—
Bleached winter		1.53 @	—
Extra bleached winter		1.55 @	—

Vegetable Oils.

Castor Oil—See Drug Market, Page 5.

China wood oil, in bbls	℔ lb.	30 @	—
f. o. b. Pacific coast		25½@	26
Cocoanut, Ceylon, domestic, bbls		17½@	17¾
Ceylon, domestic, tanks		16½@	16¾
Cochin, imported		Nominal	
Cochin, domestic, bbls		19 @	19½
Cochin, domestic, tanks		18¼@	18¾
Cochin, edible		21 @	22
Manila, 5 acid tanks		15¾@	16¼
Corn oil, crude, in barrels		18 @	19¾
refined, in barrels		21.47 @	21.67
Cottonseed, crude, f.o.b. mills	℔ lb	17½@	—
prime summer yellow, in barrels	℔ lb.	21 @	22
bleachable, in tanks	℔ lb.	19¾@	—
Hempseed oil		18 @	24
Kapok seed oil	℔ lb.	19¾@	—
Linseed, raw, car lots	℔ gal.	1.88 @	1.90
5-barrel lots		1.90 @	—
tank cars		1.84 @	—
boiled, car lots		1.92 @	—
boiled, 5-barrel lots		1.92 @	—
double boiled, car lots		1.94 @	—
double boiled, 5-barrel lots		1.94 @	—
refined, car lots		1.94 @	—
refined, 5-barrel lots		1.94 @	—
varnish, oil, according to grade, car lots		1.92 @	—
Lumbang		1.60 @	—
Olive, denatured	gal.	4.25 @	4.50
edible		Nominal	
foots	℔ lb.	42 @	45
Palm Lagos, spot, in casks	℔ lb.	Nominal	
prime, red, spot		Nominal	
Loam		Nominal	
Niger		45 @	50
Palm kernel		19 @	19¼
Peanut, crude, f.o.b. mills	℔ al.	1.86 @	—
domestic, refined		20½@	21½
edible, spot, in bbls		21 @	21½
Oriental, sellers' tanks		18 @	18¼
Perilla oil	℔ lb.	23 @	25
Poppyseed	℔ gal.	5.00 @	—
Rapeseed, in barrels, refined, French		Nominal	
blown, in barrels	℔ gal.	1.90 @	2.00
refined		1.80 @	1.85
Sesame	℔ gal.	3.00 @	—
Soya bean, Manchuria, spot, lb.		18¼@	18½
in sellers' tanks, f. o. b. coast		18¼@	18¼
Tea oil		90 @	94
Walnut		— @	3.00

Copra.

Cebu, sun dried, spot		Nominal	
Java, sun dried, spot	℔ lb.	9 @	9½
Macassar, mixed, spot		9 @	9¼
Manila, F. M., spot		Nominal	
South Sea Island, sun dried, spot		9¼@	9¾
Padang, mixed, spot		Nominal	
smoke dried		9 @	9½

Oil Cake and Meal.

Cocoanut, cake	℔ short ton.	39.00 @	41.00
meal		40.00 @	42.00
Corn cake		55.00 @	57.00
meal		60.00 @	62.00
Cottonseed cake—			
f. o. b. mill		51.00 @	—
Cottonseed meal—			
Texas, 43 per cent. protein, 8.37 per cent. ammonia, in bags, per ton		57.00 @	—
Oklahoma, 40 per cent. protein, 7.75 per cent. ammonia, in bags		54.00 @	—
other States, 36 per cent. protein, 7 per cent. ammonia, in bags		53.00 @	—
Linseed, cake	℔ short ton	52.00 @	—
meal		52.00 @	—

Petroleum and Products.

Export Quotations

ILLUMINATING OILS.

Quotations are based on the following quantities:—Bulk, tank steamer lots, ranging from 30,000 to 70,000 barrels, according to steamer capacity; barrels, cargo lots, about 30,000 barrels; cases, cargo lots averaging from 10,000 to 20,000 cases.

	S. W., 110 test.	W., 150 test.
Bulk, New York	8.25	1918.
Barrels, New York, cargo	15.50	
Cases, New York	19.25	

Prices for water white oil (150 test) are 1c. higher than those for standard white.

	Cases 110 test.	150 test.
Two, five, low screw lots	18.75	
Two, five, low screw lots	19.25	
3,000 to 10,000 cases	19.40	
1,000 to 3,000	19.55	
700 to 1,000	19.60	
500 to 700	19.65	
400 to 500	19.75	
300 to 400	19.85	
200 to 300	20.40	
100 to 200	20.75	
10 to 100	21.25	

Quotations for 150 test oil are 1 cent above those for 110 test.

NAPHTHAS, GASOLINE, ETC.

	10-gallon drums—Under 100 cases	10-gallon drums—100 cases and over.
Benzine, 59@62 deg	..	..
Gasoline, stove	..	..
Naphthas—		
Auto, 68@72 deg	..	..
73@76 deg	..	..

	In cans and cases—Under 100.	100-199.	200-299
Benzine, 50@62 deg	..	..	..
Gasoline, stove	..	..	..
Naphthas—			
Auto, 68@72 deg	..	..	..
73@76 deg	..	..	..

September 17—Refined in cases advanced ½c.

All Quotations for Gasoline and Naphtha Withdrawn May 31.

New York Jobbing Quotations.

Crude oil, steel barrels	℔ gal.	16
wooden barrels		22
Fuel oil, 28@31 deg., in barrels		15
Gas oil, 34 deg., distilled		15½
ILLUMINATING OILS.		
130 fire test, S. W., bbls		14½
150 fire test, W. W., bbls		17½
tank wagons		11½
NAPHTHAS, GASOLINE, ETC.		
Motor gasoline (garages only), steel barrels		24½
Motor gasoline to consumers		26½
Naphtha, V. M. and P., deod., steel barrels		23½
wooden barrels		29½
Gasoline, gas machine		41½
73@76 deg., steel barrels		33½
wooden barrels		39½
70@72 deg., steel barrels		31½
wooden barrels		37½
68@70 deg., steel barrels		30½
wooden barrels		36½

Lubricating Oils.

*Natural West Virginia—			
30 degrees, carloads		20 @	—
29 degrees		21 @	—
28 degrees		22 @	—
Black, reduced 29 gravity, 25@30 cold test	℔ gal.	24 @	25
29 gravity, 15 cold test		24 @	25
summer		24 @	25
Cylinder, light filtered		45 @	50
dark filtered		39 @	43
extra cold test		65 @	75
dark steam refined		28 @	32
Bloomless, 30@31 gravity		28 @	29
white, 30@31 gravity		50 @	75
Paraffine, high viscosity		40 @	41
903 specific gravity		34 @	36
885 specific gravity		25 @	27
red paraffine		30 @	35
Spindle, No. 200		38 @	40
No. 180		36 @	38
No. 150		32 @	33

*This price is carload lots f. o. b. Parkersburg, W. Va.

METALS.

*Copper, electrolytic	℔ lb.	Nominal	
Lead, New York		8.05 @	—
St. Louis		7.75 @	—
Quicksilver	flask.	125.00 @	—
jobbing lots	lb.	1.95 @	—
Silver	℔ oz.	1.01⅛@	—
Spelter, prompt Western shipment, New York	℔ lb.	9.50 @	9.75
Zinc ore, first grade blends ore,	℔ ton.	75.00 @	—
Zinc ore, immediate	℔ ton	55 @	—
Zinc ore, low grade		40.00 @	45.00

GLUES.

Extra white	℔ lb.	36 @	45
Medium white		31 @	35
Cabinet		31 @	40
low grade		24 @	27
Foot stock		16 @	22
brown		18 @	22
Common bone		15 @	20
Irish		Nominal	
French		Nominal	
Fish, liquid (in barrels, 50 gallons each)	℔ gal.	1.00 @	1.80

PAINT MATERIALS.

Pigments

Alumina hydrate. See Chemicals, Industrial.

Barytes, prime white, foreign	℔ ton.	Nominal	
domestic, f. o. b. mills		25.00 @	—
domestic, pure white, floated, in bags		33.00 @	36.00
off color, in bags		23.00 @	28.00
Blanc fixe, pulp	℔ ton.	35.00 @	60.00
dry (in bbls., 600 lbs.)	℔ lb.	5½@	@
Flake white		18 @	20
Litharge, American powdered, casks, net		10¾@	11¼
Litharge, American powdered, steel kegs, less than 500 lbs	℔ 100 lbs.	14.00 @	—
500 lbs. up to 2,000 lbs		12.60 @	—
2,000 lbs. up to 10,000 lbs		12.29 @	—
10,000 lbs. up to 30,000 lbs.			
Carload, minimum 15 tons	℔ 100 lbs.	11.97@	—

All above prices subject to cash discount of 2 per cent., and are for single delivery

English glassmakers'		Nominal	
Lithopone		8 @	8½
Metallic paints, brown	℔ ton.	24.00 @	32.00
red	℔ ton.	24.00 @	30.00
Orange mineral, American		14¼@	15¼
English		Nominal	
French		Nominal	
German		Nominal	
White lead, Basic Carbonate, American dry casks	℔ lb.	10 @	10½
Basic sulphate, casks		9¼@	9¾
White lead in oil, 100-lb. kegs, less than 500 lbs	℔ 100 lbs.	14.00 @	—
500 lbs. up to 2,000 lbs		12.60 @	—
2,000 lbs. up to 10,000 lbs		12.29 @	—
10,000 lbs. up to 30,000 lbs			
Carload, minimum 15 tons	℔ 100 lbs.	11.97 @	—

All above prices subject to cash discount of 2 per cent., and are for single delivery.

Red lead, dry, casks	℔ lb.	11¼@	11½
Red lead, dry, 100-lb. kegs, less 500 lbs		14.00 @	—
500 lbs. to 2,000 lbs		12.60 @	—
2,000 lbs. to 10,000 lbs		12.29 @	—
10,000 lbs. to 30,000 lbs		11.97 @	—
car lots, min. 15 tons		11.84 @	—
Red lead, in oil, steel kegs less than 500 lbs	℔ 100 lbs.	15.50 @	—
500 lbs. up to 2,000 lbs		13.95 @	—
2,000 lbs. up to 10,000 lbs		13.60 @	—
10,000 lbs. up to 30,000 lbs		13.25 @	—
carload, minimum 15 tons		13.11 @	—

All above prices for red lead and red lead in oil are subject to cash discount of 2 per cent., and are for single delivery.

Foreign		Nominal	
English glassmakers'		Nominal	
Zinc oxide—			
French process, red seal		13 @	13¼
green seal		13½@	13¾
white seal		14 @	14¼
Leaded grades—			
American process—			
Standard		10 @	10¼
Sterling		9¾@	10
Superior		9¼@	9½
Lehigh		9 @	9¼

Dry Colors.

Blacks.

Bone, powdered	℔ lb.	5½@	12
Carbon gas		16 @	25
Charcoal, willow, powdered		6 @	—
Drop		5½@	15
Ivory		16 @	30
Lampblack		15 @	45
Mineral blacks, car lots	℔ ton.	35.00 @	45.00
Vine	℔ lb.	4 @	—

Blues.

Bronze, ton	℔ lb.	1.35 @	1.40
Celestial, 500-lb. lots	℔ lb.	15 @	25
Chinese, 500-lb. lots		1.35 @	1.40
Milori, 500-lb. lots		1.35 @	1.40
Prussian, 500-lb. lots		1.35 @	1.40
Prussian, foreign		Nominal	
Soluble, 250-lb. lots		1.35 @	1.50
Ultramarine, in barrels		14 @	50

Browns.

Sienna, Italian, burnt and powdered, ton lots, in barrels	℔ lb.	7 @	15
burnt, lump, ton lots in barrels		4 @	6
raw, powdered, ton lots, in rels		6 @	8
raw, lump, ton lots, in barrels		5 @	6½
American, burnt and powdered, ton lots, in barrels		2½@	4
raw, in ton lots, in barrels		2½@	3
Spanish browns, high grades, per ton		24.00 @	—
low grades		16.00 @	—
Umber, Turkey, burnt, powdered, in ton lots	℔ lb.	5 @	7
burnt lump, selected, ton lots		5 @	6
raw and powdered		Nominal	
raw, in lumps		Nominal	
American, burnt, powdered, car lots, in barrels		3½@	4
raw, car lots, in barrels		3 @	3½
Vandyke brown, domestic, ton lots, in barrels		3½@	4

Greens.

Chrome, chemically pure, light	℔ lb.	40 @	50
medium		50 @	60
dark		60 @	70
Commercial		8 @	12½
Grinders'		12 @	20
Jobbers'		9 @	14
Paris greens, in bulk, arsenic, kegs		40 @	42
Verdigris, in barrels		12½@	20½

Reds.

Alizarine, lake, concentrated		Nominal	
Carmine, No. 40, bulk, 11-lb. tins		5.50 @	6.00
Amaranth		5.50 @	6.00
Crocus martus (purple oxide), per lb		4 @	—
eosine		70 @	75
Indian red, English, pure		18 @	24
American, pure		8 @	12
Oxide red, copperas, in casks		15 @	20
native, in lump (in casks)		3½@	4
powdered (in casks)		3¾@	4½
Spanish		7 @	8
Para red, toners, concentrated, per 100-lb. lots		1.70 @	1.90
commercial		20 @	50
Purple, lake		1.00 @	2.50
Rose, pink		35 @	40
lake		25 @	40
regular		20 @	—
Toluidine toner		4.50 @	5.50
Tuscan red		Nominal	
Venetian red		2½@	6
Vermilion, quicksilver, English		2.00 @	2.10
Chinese		Nominal	
Eosine		70 @	75

Yellows.

Chrome, chemically pure, ton lots	℔ lb.	30 @	32
Dutch or English pink		15 @	18
Ocher, French, superior		Nominal	
first quality		8 @	10
domestic strong	℔ lb.	3 @	4
medium	℔ ton.	30.00 @	60.00
golden, imported	℔ lb.	5 @	10
domestic, high grade		6 @	12
Zinc, yellow	℔ lb.	50 @	53

Colors in Oil.

Per Pound, in 1-lb. and 5-lb. Cans.

BLACKS.			
Coach black in japan		28 @	40
in oil		26 @	32
Drop black in oil		26 @	32
Lampblack in oil		30 @	40
BLUES.			
Chinese		1.80 @	1.60
Prussian		1.20 @	1.50
Ultramarine		45 @	60
Imitation cobalt		50 @	65
BROWNS.			
Sienna, Italian, burnt or raw, best grades		26 @	28
Turkey umber, burnt or raw, best grades		25 @	27
Vandyke, genuine		25 @	35
GREENS.			
Chrome, chemically pure		70 @	75
commercial, 25 per cent. color		30 @	35
Paris green, French		60 @	75
REDS.			
Indian		24 @	26
Tuscan		32 @	40
Venetian		15 @	18
YELLOW.			
Chrome, chemically pure		38 @	45
Ocher, French		15 @	19

Other Paint Materials.

Bronze powders, gold		1.00 @	1.75
aluminum		1.15 @	3.00
Casein		20 @	28
Copper oxide	℔ lb.	28 @	32
Chalk, English		Nominal	
French		Nominal	
Clay, china, imported, lump		20.00 @	40.00
domestic, lump		15.00 @	22.50
Cobalt oxide	℔ lb.	1.60 @	1.65
Feldspar	℔ ton.	8.00 @	12.00
Fuller's earth, powd	℔ 100 lbs.	1.50 @	2.00
Marble flour	℔ ton.	8.00 @	11.50
Manganese, car lots		90.00 @	250.00
Magnesite raw	ton.	30.00 @	35.00
calcined, powdered		50.00 @	65.00
Naphtha, deodorized		23 @	30
Plaster of paris	℔ lb.	2.00 @	3.00
dentists'		2.50 @	3.75
Pumice stone, original cks	℔ lb.	4 @	5
selected lumps in bbls		7 @	10
powdered, pure, lbs		4 @	8
Putty, com'l, in 1 and 5-lb. tins		4.70 @	8.10
linseed oil, in do		8.35 @	9.75
colored, in do		7.45 @	9.00
white lead, in do		7.25 @	—
commercial, in 120-lb. tubs		3.10 @	—
pure, in do		4.50 @	—
linseed oil, in do		0.75 @	—
Rotten stone, orig'l casks	℔ lb.	7 @	10
selected, lumps		6 @	25
powdered, in barrels		3½@	4½
Soapstone, pow'd, in bags	℔ ton.	15.00 @	25.00
Silex		22.00 @	40.00
Smalt, blue	℔ lb.	Nominal	
super black		Nominal	
Talc, American	℔ ton.	20.00 @	40.00
French		Nominal	
Italian		Nominal	
Terra alba, Am. No. 1	100 lbs.	1.25 @	—
No. 2		1.00 @	—
English		Nominal	
French		Nominal	
Tripoli, car lots	℔ lb.	1½@	—

Whiting, commercial, car lots	1.25	@	—
gliders', bolted	1.30	@	1.35
extra guilders', bolted	1.35	@	1.50
English cliffstone	1.75	@	2.75
American, paris white	1.50	@	1.75

Varnish Gums.

Egyptian asphaltum, ℔ lb.	Nominal		
Cuban, ℔ ton	45.00	@	90.00
Mexican	40.00	@	80.00
Barbados, ℔ lb.	9	@	15
California, ℔ ton.	30	@	40
Texas	16.00	@	20.00
Trinidad	25.00	@	80.00
Malta	30	@	—
Gilsonite	45.00	@	55.00
Manjak	40	@	80
Zanzibar, bean, pea white, ℔ lb.	Nominal		
pea white	Nominal		
sorts	Nominal		
bean and pea	Nominal		
Manila, pale	22	@	23
dark, hard	22	@	23
bright amber	22	@	23
standard sorts	16	@	16½
pale, nubs	17	@	17½
pale, chips	15½	@	16
Congo copal picture	40	@	45
white	35	@	38
amber	15	@	16
dark	15	@	16
Gum lac	68	@	69
Pontinak, selected fine	28	@	30
No. 1	21	@	22
nubs	16	@	16½
chips	15½	@	16
Damar, Batavia	29	@	30
Singapore, No. 1	34	@	—
Singapore, No. 2	25	@	—
Singapore, No. 3	13½	@	16
Kauri, No. 1	55	@	—
No. 2	32	@	40
No. 3	20	@	—
ordinary chips	23	@	26
B X	42	@	45
B 1	32	@	35
B 2	20	@	24
brown chips, ordinary	13	@	14
brown chips, extra	16	@	22
bright dust	18	@	25
brown dust	10	@	12
ordinary dust, white	14	@	16
brown, No. 3	18	@	20
X dark	65	@	—
XX pale	75	@	—
XXX pale	85	@	—
XXXX extra pale	1.00	@	—
XXXX picture quality	1.20	@	—
East Indian bold	24	@	—
nubs	18½	@	—
chips	15½	@	16½

Shellac.

D. C., ℔ lb.	86	@	87
V. S. O.	86	@	87
Diamond I.	Nominal		
Fine orange	75	@	80
second orange	72	@	73
T. N.	68	@	69
A. C. garnet	68	@	69
Kala buttons	Nominal		
Button	80	@	82
Bleached commercial	69	@	70
bone dry	79	@	80

Window Glass.

United inches.	Size.		AA.	A.	B.
	Bracket.			**Single.**	
25	**6x 8 to 11x14**		**$24.00**	**$20.00**	**$19.00**
34	**12x18**	to **14x20**	**25.00**	**21.00**	**20.00**
40	**10x26 to 18x22**	to **16x24**	**27.00**	**22.50**	**21.00**
50	**20x20**	to **20x30**	**28.00**	**23.75**	**22.00**
54	**15x36**	to **24x30**	**29.00**	**24.50**	**22.50**
60	**26x28 to 26x34**	to **24x36**	**30.00**	**26.00**	**23.25**
70	**28x32 to 30x30 to 32x38**	to **30x40**	**32.00**	**28.75**	**25.25**
80	**34x36**	to **30x50**	**36.50**	**33.25**	**28.75**
84	**30x52**	to **30x54**	**39.00**	**35.50**	**31.25**
	Bracket			**Double.**	
25	**6x 8 to 11x14**	to **10x15**	**$2.00**	**28.00**	**26.50**
34	**12x18**	to **14x20**	**35.00**	**31.00**	**29.00**
40	**10x26 to 18x22**	to **16x24**	**39.00**	**34.00**	**31.00**
50	**20x20**	to **20x30**	**42.00**	**37.00**	**34.50**
54	**15x36**	to **24x30**	**43.00**	**38.00**	**35.00**
60	**26x28 to 26x34**	to **24x36**	**44.00**	**39.00**	**35.50**
70	**28x32 to 30x30 to 32x38**	to **30x40**	**47.00**	**42.00**	**38.00**
80	**34x36**	to **30x50**	**51.00**	**46.00**	**41.50**
84	**30x52**	to **30x54**	**52.00**	**47.00**	**42.50**
90	**30x56**	to **34x56**	**55.00**	**50.00**	**46.00**
94	**34x58**	to **34x60**	**56.00**	**51.00**	**47.00**
100	**36x60**	to **40x60**	**66.00**	**60.00**	**56.00**

Sizes making over 100 united inches, packed in 100-feet cases only.

105	40x62	to 40x64	142.00	130.00	120.00
110	40x66	to 40x70	158.00	146.00	136.00
115	40x72	to 40x74	178.00	162.00	152.00
120	40x76	to 40x80	210.00	190.00	180.00

An additional 10 per cent. will be charged for all glass more than 40 inches wide. All sizes over 52 inches in length, and not making more than 81 united inches, will be charged in the 84 united inches bracket. All glass 54 inches wide or wider not making more than 116 united inches will be charged in the 120 united inches bracket. Sizes above 120 united inches, $29 per 100 feet case extra for every five inches.

The following discounts apply for all regular, single strength and double strength window glass, in carload lots and over, for shipments within the United States and Canada:—

Single strength, A quality, 1st 3 brackets, 77 per cent.

Single strength, B quality, 1st 3 brackets, 77 per cent.

Single strength, A and B quality, larger sizes, 77 per cent.

Double strength, A quality, all sizes, 79 per cent.

Double strength, B quality, all sizes, 81 and 3 per cent.

Note:—These prices are f. o. b. works and to them should be added a boxing charge of 30 cents for the first three brackets, 50 cents for others, as well as cartage and freight charges.

NAVAL STORES.

Spirits of turpentine	64	@	—
Wood turpentine, steam distilled	62	@	63
destructive distilled	57	@	58
Rosin, common to good strained, ℔ 280 lbs.	14.50	@	—
Large Florida graded rosins—			
B	14.50	@	—
C	14.50	@	—
D	14.70	@	—
E	14.90	@	—
F	15.00	@	—
G	15.25	@	—
H	15.25	@	—
I	15.30	@	—
K	15.75	@	—
M	15.85	@	—
N	15.90	@	—
W. G.	16.25	@	—
W. W.	16.25	@	—

Pitch, barrels (200 lbs.)	7.75	@	—
Tar, kiln burned	13.00	@	—
Retort	14.00	@	—
Pine oil, white steam, ℔ gal.	58	@	60
Pine oil, amber steam	56	@	58
Pine oil, yellow, steam distilled	57	@	59
Pine oil, destructive	50	@	51
Rosin oil, first rectified	74	@	—
second rectified	77	@	—
third rectified	82	@	—
fourth rectified	92	@	—
Tar oil, genuine distilled	36	@	37
Tar oil, commercial	35	@	36

BOTANICALS.

Agar agar, No. 1, ℔ lb.	85	@	86
No. 2	80	@	81
No. 3	75	@	76
Agaric, white	Nominal		
Almonds, bitter, bags, boxes	42	@	45
sweet, 28-lb. boxes	28	@	30
meal	35	@	36
Aloin	95	@	1.00
Areca nuts	38	@	40
Balm of Gilead buds	Nominal		
Cantharides, Chinese	90	@	1.00
Chinese, powdered	1.25	@	1.30
Russian	4.45	@	4.50
Russian, powdered	4.60	@	4.75
Cassia, fistula	18	@	19
Colocynth apples, Spanish	40	@	41
Trieste	Nominal		
Pulp, U. S. P.	47	@	50
Dragon's blood, mass	35	@	65
reeds	5.00	@	5.25
Ergot, Spanish	1.75	@	1.85
Russian	1.75	@	1.85
Grains of paradise	1.35	@	1.40
Guarana	90	@	95
Iceland moss	24	@	25
Irish Moss, ordinary	12	@	13
bleached	13	@	14
Isinglass, Russian	7.50	@	8.00
Kamala, U. S. P.	3.25	@	3.30
Kola nuts, West Indian	28	@	30
Lupulin, N. F.	1.00	@	1.00
Lycopodium	1.65	@	1.70
Manna flakes, large	85	@	1.00
small	68	@	70
Nux vomica, whole	13	@	14
powdered	16	@	19
Papain	4.75	@	5.00
Poppy heads	1.50	@	1.55
Quassia chips	8	@	9
St. John's bread, grinding	Nominal		
Tamarinds	12	@	13
by the keg	5.00	@	6.50

Balsams.

Copaiba, South African, ℔ lb.	75	@	80
Para	60	@	65
Fir, Canada, ℔ gal.	6.00	@	6.25
Oregon	1.75	@	1.80
Peru, ℔ lb.	3.35	@	3.40
Tolu	1.05	@	1.10

Barks.

Angostura, ℔ lb.	33	@	35
Basswood	18	@	22
Barberry	90	@	95
Bayberry	7	@	8
Black haw, bark of root	45	@	50
bark of tree	35	@	40
Buckthorn, true	24	@	25
Calisaya	75	@	90
Canella, alba	16	@	19
Cascara sagrada	19	@	20
Cascarilla quills, long	23	@	24
quills, small	20	@	21
siftings	12	@	12½
Cinchona, red, quills	90	@	1.15
broken	85	@	1.00
chips	68	@	69
yellow quills	Nominal		
broken	70	@	75
Loxa, pale, bales	Nominal		
Loxa, pale, pwd., bxs	Nominal		
Maracaibo, yellow, pwd	Nominal		
Condurango	12	@	13
Cottonroot	15	@	16
Cramp, so called	11	@	12
genuine	50	@	55
Dogwood	8½	@	9
Elm, bundles, select	20	@	21
grinding	11	@	12
Lemon peel	10	@	11
Mezereon	23	@	24
Oak, red	6	@	8
white	4	@	5
Orange peel, bitter, Curacao, ¼s	6½	@	7
sweet Malaga, ribbons	12	@	13
quarters	13	@	13¼
sweet, Trieste	13	@	13½
Prickly ash	14	@	15
Pomagranate of root	40	@	45
of fruit	31	@	—
Sassafras, ordinary	14	@	15
select	24	@	25
Simarubra	60	@	65
Soap, whole	12	@	13
cut	19	@	20
crushed	17	@	18
Tanalder	5½	@	6
Tonga	48	@	50
Wahoo of root	43	@	44
of tree	24	@	25
Witch hazel	6	@	6½
Wild cherry	10	@	18
White pine	6¾	@	7
White poplar	4	@	5

Beans.

Calabar, ℔ lb.	60	@	65
Castor, India	9	@	9½
Manchuria	9¾	@	—
South American	9¼	@	9¾
St. Ignatius	24	@	25
Tonka, Angostura	1.00	@	1.05
Para	65	@	70
Surinam, crystallized	70	@	75
Vanilla, Mexican, whole	4.50	@	6.00
cuts	3.00	@	3.25
Bourbon	2.12½	@	2.13
South American	3.00	@	3.25
Tahiti, white label	1.65	@	1.70
green label	1.55	@	1.60
yellow label	1.60	@	1.65

Berries.

Cubeb, ordinary	1.25	@	1.30
XX	1.30	@	1.35
powdered	1.30	@	1.35
Fish (cocculus indicus)	50	@	60
Horse nettle, dry	75	@	1.00
Juniper	8	@	9
Laurel	7	@	8
Prickly ash	10	@	11
Saw palmetto	16	@	17
Sloe	50	@	55

Flowers.

Arnica, ℔ lb.	90	@	95
Borage	60	@	70
Calendula petals	2.50	@	3.20
whole	30	@	32
Chamomile, Roman	90	@	95
Hungarian, true	Nominal		
Hungarian style	47	@	50
Italian	47	@	48

Clover tops	15	@	20
Elder	30	@	32
Insect, open	30	@	33
powdered	33	@	35
Kousso	Nominal		
Lavender, ordinary	25	@	26
select	30	@	35
Linden, with leaves	36	@	37
without leaves	48	@	50
Malva, blue	2.50	@	2.60
black	40	@	50
Mullein	1.80	@	1.90
Orange	2.00	@	—
Ox-eye, daisy	5	@	5¼
Poppy, red	1.00	@	1.25
Rosemary	70	@	75
Saffron, American	30	@	40
Valencia	15.50	@	15.75

Herbs and Leaves.

Aconite, ℔ lb.	35	@	40
Bay, true	Nominal		
Boneset herb	18	@	19
leaves	18	@	19
Buchu, short	2.40	@	2.45
long	2.40	@	2.45
Belladonna	1.00	@	1.50
Cannabis indica, imported	3.50	@	3.60
domestic, U. S. P.	35	@	95
Chiretta	40	@	42
Coca, Huanoco	Nominal		
Truxillo	55	@	56
Coltsfoot	18	@	20
Conium	Nominal		
Corn silk	11	@	12
Damiana	16	@	17
Deer tongue	17	@	22
Digitalis, domestic	37	@	40
foreign	45	@	46
Eucalyptus	8½	@	9
Euphorbia pilulifera	19	@	20
Grindelia robusta	10	@	11
Henbane	1.25	@	2.00
Horehound	23	@	24
Jaborandi	30	@	31
Laurel	12¾	@	13¼
Liverwort	30	@	35
Lobelia	10	@	11
Patchouli	75	@	85
Matico	35	@	36
Marjoram, French	Nominal		
Pennyroyal leaves	18	@	19
Peppermint, American	25	@	30
Pichi	10	@	12
Pulsatilla	5.50	@	—
Princess pine	Nominal		
Rose, red	1.25	@	1.35
Rosemary	15	@	16
Rue	40	@	50
Sage, Greek, good stemless	27½	@	28
fair grinding	27	@	27½
domestic	55	@	60
Spanish, stemless	19½	@	20
Savory	25	@	26
Skull cap, leaves	25	@	30
herbs	60	@	65
Senna, Alex., whole leaf	1.15	@	1.20
half leaf	85	@	90
siftings	35	@	40
powdered	41	@	42
Tinnevelly	14	@	22
powdered	18	@	20
pods	16	@	17
Spearmint, American	20	@	21
Stramonium	18	@	19
Thyme, Spanish	11¼	@	11¾
French	14¼	@	14¾
Uva ursi	17	@	18
Witchhazel	7	@	8
Wormwood, foreign	13	@	16
Yerba santa	8	@	9

Roots.

Aconite, U. S. P., ℔ lb.	40	@	45
Aletris	50	@	55
Alkanet	2.75	@	3.00
Althea, whole	33	@	34
cut	77	@	80
Angelica, European	60	@	70
American	40	@	45
Arnica, Montana	80	@	1.00
Arrowroot, Bermuda	55	@	60
St. Vincent, bbls	40	@	45
domestic	25	@	26
Belladonna	2.50	@	2.65
Berberis aquifolium	20	@	21
Beth	14	@	15
Blood	45	@	46
stripped	48	@	50
Blueflag	36	@	37
Bryonia	30	@	31
Burdock	16½	@	17
Calamus, bleached	1.25	@	—
ordinary	17	@	20
Cohosh, black	9	@	10
blue	11	@	12
Colchicum	2.75	@	2.80
Colombo	28	@	30
powdered	32	@	34
Culvers	15	@	16
Dandelion, foreign	30	@	35
domestic	27	@	28
Doggrass, U. S. P., cut	40	@	45
Echinacea	28½	@	30
Elecampane	9	@	10
Galangal	27	@	28
Geranium	5	@	6
Geisemium	8	@	9
Gentian, whole	16½	@	17
ground	18½	@	19
powdered	19½	@	20
Ginger—See Spice Market.			
Ginseng, whole	4.50	@	—
broken	1.70	@	—
Golden seal	5.25	@	5.30
powdered	5.80	@	6.00
Hellebore, white, imported	Nominal		
black	1.50	@	—
domestic, white	22	@	23
powdered, white	23	@	26
Ipecac, Cartagena, whole	4.25	@	4.30
powdered	4.50	@	4.55
Rio, whole	4.25	@	4.30
powdered	4.50	@	4.55
Jalap	55	@	60
Kava kava	18	@	19
Lady slipper	95	@	96
Licorice, Spanish, in bales	30	@	32
selected	32	@	34
powdered	33	@	35
Russian and peeled	85	@	90
powdered	50	@	55
Lovage, American	75	@	76
Manaca	27	@	30
Mandrake	11½	@	12
Musk	1.70	@	2.00
Orris, Florentine, whole	28	@	29
powdered	29	@	30
Verona	25	@	26
fingers	2.00	@	2.10
powdered	26	@	27
Pareira brava	33	@	34
Pellitory	30	@	31
Pink, true	45	@	46
Pleurisy	18	@	19
Poke	5½	@	6
Rhatany	14½	@	15
Rhubarb, Shensi	85	@	90
high dried	60	@	65
cuts	75	@	2.50
Sarsaparilla, Honduras	80	@	85
Mexican	50	@	52
Scammony root	7½	@	8
Senega, Northwestern	97	@	1.05
Southern	1.10	@	1.15

Serpentaria	47	@	50
Skunk cabbage	14	@	17
Snake, Canada	40	@	60
Spikenard	30	@	31
Squills, white	14	@	16
powdered	22	@	25
Stillingia	13	@	14
Stone	10	@	11
Turmeric, Madras	12	@	13
China	10	@	11
Aleppy	Nominal		
Unicorn, false (helonias)	50	@	55
true (aletris)	50	@	55
Valerian, Belgian	1.35	@	1.40
Japanese	1.45	@	1.50
English	Nominal		
Wild yam	8	@	9
Yellow dock	11	@	12
Zodeary	40	@	—

Seeds.

Anise, Spanish	26¾	@	27½
star, actual weight	26	@	26½
Levant	Nominal		
Italian	Nominal		
Canary, Spanish	25	@	26
Smyrna	Nominal		
South American	25	@	26
Dutch	Nominal		
Caraway, Dutch	Nominal		
African	62½	@	63
Cardamoms, bleached	85	@	1.50
decorticated	57	@	59
green	45	@	48
Celery	52	@	53
Colchicum	3.80	@	3.75
Conium	40	@	41
Coriander, natural	10½	@	11
bleached	13	@	13½
Cummin, Morocco	11½	@	12
Levant	Nominal		
Malta	Nominal		
Dill	21½	@	22
Fennel, French	17	@	17½
Roumanian	Nominal		
Flax, whole, ℔ bbls.	18.25	@	19.00
ground, ℔ lb.	11	@	12
Foenugreek, ℔ lb.	11½	@	12
Hemp, Manchuria	9	@	10
Russian	Nominal		
Job's tears	6	@	6¼
Larkspur	33	@	34
Lobelia	30	@	31
Millet, natural	5¾	@	6
hulled	8½	@	9½
Mustard, Bari, brown	Nominal		
California, brown	24	@	25
Sicily, brown	Nominal		
Bombay	17½	@	18
Chinese, yellow	11¾	@	12¼
English, yellow	Nominal		
Dutch, yellow	Nominal		
Parsley	24	@	25
Poppy, Dutch	Nominal		
India	40	@	41
Russian	76	@	78
Pumpkin	18	@	19
Quince	1.20	@	1.25
Rape, English	Nominal		
Bulgarian	Nominal		
Japanese, large	9	@	10
small	8½	@	9
Sabadilla	13¾	@	14
Staveacre	30	@	31
Stramonium	35	@	40
Strophanthus, Kombe	1.90	@	2.00
Hispidus	1.50	@	—
Sunflower, large	7½	@	8
small	7½	@	8
Worm, Levant	90	@	95
American	9	@	10

Spices.

Cassia, Batavia, No. 1, ℔ lb.	28	@	29
shortstick	28	@	29
Batavia, No. 3	Nominal		
No. 1, Saigon rolls	52	@	53
China, selected, cases	24	@	25
broken, selected	15¾	@	16¼
buds	Nominal		
Cinnamon, Ceylon, No. 1	33	@	34
No. 2	32	@	33
No. 3	31	@	32
Cloves, Amboyna	61	@	62
Zanzibar	47	@	47¼
Penang	70	@	80
Ginger, Cochin, "A. B. C."	18	@	19
Cochin D	17	@	19
African, No. 1	13	@	13½
Japan	12¼	@	12
Jamaica, bleached	25	@	26½
unbleached	17½	@	20
Mace, Banda	56	@	57
Penang, No. 1	55	@	56
Penang, No. 2	51	@	52
No. 2, Batavia	47	@	48
Nutmegs, 105s to 110s	38	@	39
75s to 80s	42	@	43
grinding	37	@	38
Paprika, Spanish	50	@	52
Spanish, Hungarian type	51	@	53
Pepper, black, Singapore	25	@	26
Aleppy	27½	@	28
Lampong	25	@	26
Tellicherry	27½	@	28
white, Singapore	32	@	32½
Penang	Nominal		
red, chillies, Japan, No. 1	16¼	@	16½
Mombassa	24	@	25
capsicums, Bombay	13½	@	14
Japan	12½	@	13
Pimento	10	@	11

DRUGS AND PHARMACEUTICAL CHEMICALS.

Acetanilid, C. P., in bbls., ℔ lb.	73	@	75
Acetphenetidin	2.90	@	3.00
Acetone	25¼	@	25¾
Acetone oil, light	1.65	@	1.70
heavy	90	@	95
Aconitine, ℔ ¼-oz. vial	Nominal		
Adepsianac, hydrous, ℔ lb.	39	@	40
anhydrous	49	@	50
Alcohol, 188 proof, grain, ℔ gal.	4.91	@	—
100 proof, U. S. P.	4.97	@	—
cologne spirits, 190 proof	5.06	@	—
sugar cane, 188 proof	4.90	@	4.95
sugar cane, 190 proof	4.92	@	4.97
cologne spirits, denatured	4.95	@	5.00
ref. wood, 95 per cent.	91¼	@	92
97 per cent.	94½	@	95
denatured, 180 proof	68	@	69
188 proof	69	@	70
Aldehyde, commercial, ℔ lb.	1.25	@	1.30
Ambergris, black, per oz.	10.00	@	15.00
gray	22.00	@	24.00
Ammonia, carb., domestic, ℔ lb.	13	@	13¼
powdered	14	@	14¼
chloride, U. S. P.	26½	@	27
Amyl acetate, ℔ gal.	5.30	@	5.35
Antipyrine, bulk, ℔ lb.	19.50	@	20.00
Antimony, needle, fine powder	13½	@	14
sulphate, 16 to 17 per cent. chlor. (solution, butter of antimony)	35	@	75
	18	@	20

Aristol—See Thymol Iodide.			
Asperin, powdered	℔ lb.	2.15 @	2.25
Atropine	℔ lb.	35.00 @	36.00
Barium, chlorate	℔ lb.	50 @	60
nitrate		12 @	14
dioxide		25 @	30
Bay Rum, Porto Rico	℔ gal.	3.70 @	3.75
St. Thomas		3.75 @	4.00
Benzonaphthol, A. M. A.	℔ lb.	7.00 @	8.00
Bismuth, ammonium citrate, U. S. P.		4.30 @	4.35
citrate, U. S. P., 8th revision		3.50 @	3.55
glycerite, N. F.		1.40 @	1.45
liquor		55 @	60
metallic		3.50 @	3.65
nitrate, crystals		2.30 @	2.35
oxide, powder		4.10 @	4.15
hydrated		4.25 @	4.30
oxy chloride		3.50 @	3.55
salicylate, 38-40 per cent.		3.35 @	3.40
subsalicylate, 62-66 per cent.		3.90 @	3.95
subbenzoate		4.70 @	4.75
subcarbonate, U. S. P.		3.50 @	3.55
x-ray		4.70 @	4.75
subgallate		3.50 @	3.55
subiodide		5.60 @	5.65
subnitrate, powder		3.20 @	3.25
cones		3.30 @	3.33
tannate		3.10 @	3.15
Borax, crystals and granulated, sacks (contract)		7¼@	10¼
spot, sacks		7¼@	8
crystals, granulated and powdered, barrels		7¾@	8¾
crystals or granulated, U. S. P., in kegs		8¾@	—
Bordeaux mixture, paste		9 @	11
powder		16 @	17
Bromide, ammonium, granular		75 @	76
potassium, granular		1.25 @	1.30
potassium crystals		1.35 @	1.36
sodium, granular		65 @	66
strontium, granular		75 @	76
Bromine, technical, bulk		75 @	—
N. F.		75 @	—
Burgundy, pitch, domestic		7 @	8
foreign		Nominal	
Cadmium, bromide		1.75 @	—
metal sticks		1.50 @	1.65
Caffeine, alkaloid		11.50 @	12.00
hydrobromide		10.70 @	12.00
citrated		8.00 @	—
phosphate		14.00 @	15.00
sulphate		15.00 @	16.00
Calcium, hypophosphites	℔ lb.	1.00 @	1.05
phosphate, precip.		22 @	23
sulpho. carbolate		1.02 @	1.07
Calamine		26 @	28
Camphor, monobromated		3.75 @	3.85
Carbon, bisulphide, bulk		9 @	10
Cassia, C. P.		45 @	50
Castile soap, white, pure, spot		75 @	80
Marseilles		18 @	19
green, pure		17 @	18
ordinary		14 @	16
mottled, pure		15 @	16½
ordinary		12 @	13
Castor oil, AA, bbls.		30 @	31
cases		31 @	32
No. 3 barrels		29½@	30
second hands		36½@	37
Chloroform, U. S. P.		65 @	70
Cerium oxylate		1.00 @	—
Chalk, precipitated, light, casks	℔ lb.	4¾@	5
heavy		3¾@	5
Charcoal, willow, pwd.		7 @	8
Chloral Hydrate		1.58 @	1.63
Chlorine, liquid		15 @	24
Chrysarobin		5.25 @	5.30
Citrates, iron, U. S. P.		1.15 @	—
iron and ammon., U. S. P.		1.00 @	—
green scales		1.30 @	—
iron and ammon., B. S.		1.00 @	—
iron phosphate		1.00 @	—
iron pyrophosphate		1.05 @	—
iron strychnine		1.25 @	—
potash		1.70 @	—
soda, 8th revision		75 @	—
9th revision		85 @	—
Civet		2.50 @	2.75
Cocaine, hydrochloride, granular and flake	℔ oz.	11.00 @	11.25
large crystals		11.— @	11.50
Cocoa butter, bulk		32 @	33
wrapped fingers, boxes		37 @	38
Codeine, sulphate, 100 oz. lots, ℔ oz.		8.10 @	8.25
phosphate		7.60 @	7.75
nitrate		9.10 @	9.25
hydrobromide		7.75 @	7.85
alkaloid		10.15 @	10.30
acetate		8.65 @	8.75
muriate (hydrochloride)		9.10 @	9.25
salicylate		7.25 @	7.35
Codliver oil, Newf'dland	℔ bbl.	89.00 @	90.00
Norwegian		135.00 @	150.00
Collodion, U. S. P.	℔ lb.	41 @	45
flex, U. S. P.		65 @	70
Corn syrup, 42 deg.	℔ 100 lbs.	3.98 @	—
43 degrees		4.08 @	—
sugar, brewers'	℔ 100 lbs.	4.26 @	—
Cotton, soluble	℔ lb.	79 @	1.00
Coumarin		32.00 @	—
Cream of tartar, powder		68½@	69
crystals		69 @	69¼
Cresol, U. S. P.		24 @	25
Creosote, U. S. P.		2.00 @	2.10
carbonate		26.00 @	28.00
Cuttlefish, Trieste		48 @	55
French		43 @	50
jewelers', large		1.75 @	1.80
jewelers', small		1.75 @	1.80
Cyanide, chloride mixture		32 @	35
Dover's powder	℔ lb.	2.85 @	3.05
Emetine, alk., 15 gr. vials		2.75 @	3.00
Epsom salt, tech	℔ 100 lbs.	3.37½@	3.50
U. S. P.		3.62½@	3.90
Ether, U. S. P., 1900	℔ lb.	28 @	29
washed		32 @	33
U. S. P., 1880		24 @	25
nitrous, concentrated, 1 to 21		1.10 @	1.11
acetic, 95 p. c., carboys		83 @	85
U. S. P., 8th and 7th		1.50 @	1.55
sulphuric, anesthesia, 100 gramme lots		16 @	17
Eucalyptol		1.35 @	1.40
Formaldehyde, gov. price f. o. b. factory		16½@	—
Fusel oil, crude	℔ gal.	3.30 @	3.50
refined	℔ gal.	5.75 @	6.00
Gelatine, silver	℔ lb.	1.45 @	1.50
gold		Nominal	
Glycerine, C. P., in bulk	℔ lb.	61 @	62
drums and bbls. added			
C. P., in cans		63 @	64
dynamite, drums included		60 @	—
30 degrees, yellow, distilled		60½@	61
soaplye, loose		38 @	38½
saponification, loose		42 @	42½
Glycero-phosphate, calcium		1.80 @	1.90
soda, crystals		2.20 @	2.30
soda, liquor, 75 per cent		1.20 @	1.30
potash liquor, 75 per cent		1.75 @	1.80
Guaiacol, carbonate	℔ oz.	3.50 @	—
liquid	℔ lb.	18.00 @	19.00
Haarlem oil	℔ gross bottles	8.50 @	9.00
Hexamethylene-tetramine	℔ lb.	1.10 @	1.15
Honey, California		29 @	30
Hydrogen peroxide, per gross		7.50 @	20.00
Hydroquinone		2.70 @	2.75
Hypophosphite, calcium		1.00 @	1.05
Manganese		2.00 @	2.10
iron		2.00 @	2.10
potash		2.15 @	2.20
soda		1.10 @	1.15
Ichthol		Nominal	

Iodine, ammonium		4.15 @	4.20
arsenous		5.00 @	—
arsenous and mercuric solution		20 @	—
barium		5.25 @	—
bismuth subiodide		5.00 @	5.65
cadium		4.40 @	—
calcium		4.10 @	—
copper		4.95 @	—
ethyl		5.25 @	—
resublimated iodine		4.25 @	4.30
Iodoform		5.00 @	5.05
Iron		4.05 @	—
iron Iodide syrup		31 @	32
lead		2.95 @	—
lithium		4.80 @	—
magnesium		4.85 @	—
manganese		4.85 @	—
mercury, green and yellow		4.10 @	4.15
red		4.20 @	4.25
potassium		3.75 @	3.80
sodium		3.90 @	3.95
starch		2.00 @	—
strontium		3.50 @	3.55
sulphur		3.75 @	—
thymol		15.90 @	16.00
25 ozs., one delivery		1.08 @	1.12
zinc		4.90 @	—
Iodoform		5.00 @	—
Ketone, ethyl methyl	℔ gal.	25½@	25¾
Lac sulphur, domestic	℔ lb.	9 @	10
foreign		39 @	40
Lanoline, hydrous, U. S. P.		39 @	40
anhydrous		49 @	50
Licorice, powder, compound U. S. P.		25 @	30
extract		90 @	95
stick, Corigliano		82½@	83
Lithium, carbonate		1.80 @	—
citrate		2.00 @	—
Magnesia, carb., U. S. P., barrels		25 @	30
technical, barrels		16 @	17
bags		18 @	20
calcium		80 @	85
Manganese, glycerophos		3.35 @	3.40
peroxide		70 @	75
Menthol		5.50 @	6.00
Mercurials, hard and soft—			
calomel	℔ lb.	2.00 @	—
corrosive sublimate		1.79 @	—
mercury bisulphate		1.58 @	—
red precipitate		2.19 @	2.29
white precipitate		2.29 @	2.39
blue mass, U. S. P.		95 @	—
mercury and chalk		95 @	—
mercurial ointment, 33⅓%		93 @	—
mercurial ointment, 50%		1.30 @	—
citrine ointment		64 @	—
Methyl acetone	℔ lb.	98½@	99
acerate	gal.	21 @	22
salicylate, U. S. P.	lb.	25 @	30
Methylene blue, medicinal		15.00 @	17.00
Milk powder		16 @	20
Morphine, bulk, 25-oz. lots, acetate		12.80 @	—
alkaloid		16.00 @	—
diacetyl alkaloid		17.45 @	—
diacetyl hydrochloride		15.70 @	—
ethyl hydrochloride		18.00 @	—
hydrochloride		12.80 @	—
sulphate		11.80 @	—
Musk, pods, Cab.		12.00 @	12.50
Tonquin		25.00 @	26.50
grain, Cab.		18.50 @	19.00
Tonquin		38.00 @	40.00
druggists'		Nominal	
synthetic	℔ lb.	30.00 @	—
Myrbane oil, refined, drums		19 @	20
Naphthaline balls. (See coal-tar bases.)			
Nitrate of silver	℔ oz.	63¼@	64¼
Olive oil, yellow	℔ gal.	4.50 @	5.00
green		4.50 @	5.00
edible		7.00 @	9.00
Opium, cs., U. S. P.	℔ lb.	21.50 @	—
jobbing lots		21.50 @	—
powdered		23.50 @	—
granular		24.50 @	—
Orthoform	℔ oz.	Nominal	
Oxgall, U. S. P.		1.50 @	—
Petrolatum, bbls., amber	℔ lb.	5½@	7
pale, yellow		5½@	7
cream white		7½@	8
lily white		13 @	14
snow white		15 @	16
Phenolphthalein		5.50 @	6.00
Phenylhydrazine hydrochloride		Nominal	
Phosphorus, yellow		1.35 @	1.40
red		1.70 @	—
Pilocarpine	℔ oz.	16.00 @	20.00
Podolphylin, U. S. P.	℔ lb.	4.10 @	4.25
Potash, permanganate		1.30 @	1.40
permanganate, U. S. P.		1.75 @	2.00
cyanide U. S. P.		60 @	70
bicarbonate		70 @	75
citrate, bulk		1.70 @	—
acetate		1.50 @	—
Quicksilver, per flask (75 lbs.)		125.00 @	130.00
jobbing lots	℔ lb.	1.95 @	—
Quinine, sulp. and bisulp., manufacturers' quotations, 100-oz. tins	℔ oz.	90 @	—
50-oz. tins		91 @	—
25-oz. tins		92 @	—
5-oz. tins		94 @	—
1-oz. tins		98 @	—
alkaloid		1.37 @	—
acetate		1.50 @	—
arsenate		1.35 @	—
arsenited		1.35 @	—
benzoate		1.35 @	—
citrate		1.25 @	—
dihydrobromide		1.88 @	—
dihydrochloride (bimuriate)		1.32 @	—
ferrocyanide		1.32 @	—
formate		1.59 @	—
gylcerophosphate		2.01 @	—
hydodide		1.52 @	—
hydrobromide		1.20 @	—
hydrochloride (muriate)		1.20 @	—
hydrochloride and urea (bimuriate and urea)		1.59 @	—
hydrochlorosulp		1.50 @	—
hypophosphite		1.35 @	—
lactate		1.35 @	—
phenosulphonate (sulprocharbolate)		99 @	—
phosphate		1.22 @	—
salicylate		1.18 @	—
tannate		82 @	—
tartrate		1.18 @	—
second hands, American		1.00 @	—
Java		91 @	92
cinchonine, alkaloid		61 @	—
sulphate		35 @	—
cinchonidine, alkaloid		1.06 @	—
sulphate		70 @	—
Resorcin, crystals, U. S. P.	℔ lb.	7.75 @	8.00
Rhodol		6.50 @	6.75
Rochelle salts, powdered		46½@	47
crystals		47 @	47½
Rosewater, triple, demj		9.00 @	10.00
Russian white paraffin oil, medicinal, 885@890 deg. gal.		3.65 @	—
870@875 deg.		2.25 @	—
American, medicinal		1.35 @	—
American, cold cream		65 @	1.35
Saccharin, soluble		23.00 @	—
insoluble		23.00 @	—
Salacine, bulk		30.00 @	35.00
Salol, manufacturers' prices		1.50 @	—
Santonin, crystals, bulk		47.00 @	48.00
powdered		48.00 @	48.50
Seidlitz mixture		36 @	36½
Soda benzoate, U. S. P.	℔ lb.	3.00 @	3.10
cyanide, mfrs.		37 @	40
nitrite, technical		32 @	33
U. S. P.		48 @	50
salicylate		90 @	1.00
sulphocarbolate		65 @	70
Strontium, carbonate, tech		40 @	45
pure		85 @	90
nitrate		25 @	30

Strychnine and Salts, in 100-oz. lots, as follows:—			
alkaloid, crystals, bulk,	℔ oz.	1.80 @	—
alkaloid, powder, bulk,	℔ oz.	1.70 @	—
sulphate, cryst. and powder, bulk	℔ oz.	1.40 @	—
acetate, bulk	℔ oz.	1.80 @	—
arsenate, bulk	℔ oz.	1.80 @	—
arsenited, bulk	℔ oz.	1.80 @	—
glycerophosphate, bulk,	℔ oz.	1.80 @	—
hydrobromide (bromide), bulk	℔ oz.	1.80 @	—
hydrochloride (muriate), bulk	℔ oz.	1.80 @	—
hypophosphate, bulk	℔ oz.	2.00 @	—
nitrate, bulk	℔ oz.	1.80 @	—
phosphate, bulk	℔ oz.	1.80 @	—
Sugar coloring (caramel), in barrels	℔ gal.	1.05 @	1.10
Sugar of milk, powdered	℔ lb.	56 @	60
Sulfonal, 100-oz. lots		1.30 @	1.50
Sulphonmethane		13.00 @	14.00
Sulphomethylmethane, U. S. P.		16.00 @	17.00
Sulphur, precipitated, U. S. P.		40 @	41
Sulpnur, roll brimstone		3.70 @	—
refined flour		3.85 @	—
flowers, sublimed		3.95 @	—
commercial flour		1.80 @	—
superfine, commercial		3.25 @	—
superfine, refined		4.05 @	—
Tartar emetic, in casks	℔ lb.	67 @	67½
U. S. P.		73 @	73½
Theobromine, alkaloid	℔ lb.	23.00 @	—
Terpinhydrate		48 @	50
Thymol		13.00 @	13.50
Iodide		16.00 @	17.00
Toluol, gov. price, gal.		1.50 @	1.55
Trional	℔ oz.	1.25 @	1.35
Vanillin	℔ oz.	87½@	90
Venice turpentine, art	℔ lb.	6 @	7
true		5.00 @	5.25
Witch hazel extract	℔ gal.	1.18 @	1.20
Zinc oxide, U. S. P.	℔ lb.	38 @	39

GUMS.

Aloes, Curacao, cases	℔ lb.	9¼@	10
in gourds		15½@	16
Barbadoes, true		1.10 @	1.15
Cape		19 @	20
Socotrine		Nominal	
Ammoniac, tears		1.45 @	1.50
Arabic, firsts		50 @	52
seconds		Nominal	
thirds		Nominal	
sorts, amber, cleaned		28½@	29
white		45 @	50
Asafoetida, lump		1.75 @	2.00
powdered		2.20 @	2.25
Benzoin, Siam		1.40 @	1.90
Sumatra		31 @	42
Camphor, Am., ref'd, bbls., bulk		1.34½@	—
cases of 100 blocks		1.35 @	—
squares of 4 oz.		1.35½@	—
16s, in 1-lb. cartons		1.38 @	—
16s, bulk		1.37 @	—
24s, in 1-lb. cartons		1.38½@	—
24s, bulk		1.37½@	—
32s, in 1-lb. cartons		1.39 @	—
32s, bulk		1.38 @	—
Japan, refined, 2½-lb. slabs		1.72 @	1.75
1-lb. blocks		Nominal	
oz. tabs		1.70 @	1.75
24s		1.70 @	1.75
Chicle		1.15 @	1.20
Euphorbium		24 @	25
Galbanum		1.40 @	1.50
Gamboge, mass and pipe		1.90 @	—
powdered		2.00 @	2.10
Guaiac		1.75 @	1.80
powdered		2.00 @	2.05
Karaya, whole		Nominal	
powdered		50 @	60
Kino		50 @	60
Mastic		1.25 @	1.40
Myrrh, select		80 @	85
sorts		75 @	80
siftings		65 @	70
Olibanum, siftings		13 @	14
tears		16 @	18
Sandrac		72 @	73
Scammony resin		3.00 @	3.25
Aleppo		Nominal	
Virgin		Nominal	
Senegal, picked		35 @	40
sorts		29 @	30
Spruce		65 @	90
Styrax, artificial, cases		2.75 @	2.80
Thus	℔ 280 lbs.	13.00 @	14.00
Tragacanth	℔ lb.	2.80 @	3.00
seconds		Nominal	
thirds		Nominal	
sorts		Nominal	
Turkey, firsts		Nominal	
seconds		Nominal	
thirds		Nominal	

ESSENTIAL OILS.

Almond, bitter	℔ lb.	13.00 @	13.25
bitter, S. P. A.		13.50 @	14.00
artificial		5.25 @	5.50
sweet true		Nominal	
peach kernel		45 @	50
Angelica		40.00 @	50.00
Anise		1.15 @	1.20
Bay		2.75 @	2.80
Bergamot		7.50 @	8.00
synthetic		4.00 @	4.25
Birch tar, crude		70 @	75
refined		2.50 @	2.75
Bois de rose		5.00 @	5.25
Cade		1.00 @	1.10
Cajeput		75 @	85
Calamus		4.50 @	4.55
Camphor, heavy gravity		12 @	13
Japanese, native		24 @	25
Canaga, native		6.00 @	6.25
rectified		6.50 @	6.55
Capsicum oleoresin, lbs., lots		4.25 @	4.50
Caraway		8.00 @	8.50
Carvol		13.50 @	14.00
Cassia, 75@80 per cent. technical		2.35 @	2.40
lead, free		2.50 @	2.60
redistilled, U. S. P.		3.00 @	3.20
Cedar leaf		1.10 @	1.25
wood		19 @	20
Celery		20.00 @	21.00
Cinnamon, Ceylon, heavy		20.00 @	22.00
Citronella, Ceylon, drums		50 @	51
cans		51 @	52
Java		70 @	75
Cloves, cans		3.25 @	3.30
bottles		3.30 @	3.35
Copaiba		95 @	1.00
Coriander		28.00 @	28.50
Croton		1.25 @	1.30
Cubeb		8.00 @	8.25
Cumin		11.75 @	12.00
Dill		9.00 @	12.00
Erigeron		3.00 @	3.25
Eucalyptus, Australian		52½@	55
Fennel seed, sweet		3.75 @	4.00
Geranium, Turkish		4.85 @	4.90
rose, Africa, Algeria		10.50 @	11.00
Bourbon		9.50 @	10.00
Ginger		8.50 @	9.00
oleoresin		4.00 @	4.25
Gingergrass		3.25 @	3.30
Hemlock		1.15 @	1.25
Juniper berries, rectified		11.00 @	11.25
twice rectified		12.50 @	13.00
wood		2.00 @	4.00
Lavender, flowers		6.00 @	6.25
Spike, French		1.25 @	1.35
Spike, Spanish		1.25 @	1.30
garden		80 @	1.10
Lemon		1.35 @	1.50
Lemongrass		1.40 @	1.45

Lime, expressed		5.00 @	5.25
distilled		1.85 @	1.90
Linaloe		3.25 @	3.30
Mace, distilled		2.25 @	2.30
expressed		Nominal	
Malefern		16.50 @	17.00
Mustard, natural		30.00 @	32.00
artificial		19.00 @	20.00
expressed		90 @	1.00
Neroli, petale		90.00 @	110.00
bigarde		80.00 @	100.00
synthetic		15.50 @	24.00
Niobe		4.85 @	4.90
Nutmeg		2.25 @	2.30
Orange, sweet Italian		3.00 @	3.25
West Indian		1.75 @	1.80
bitter		1.75 @	1.80
Origanum		20 @	50
Parsley		6.50 @	7.00
Patchouli		28.00 @	30.00
Pennyroyal, American		1.65 @	1.80
French		1.20 @	1.25
Peppermint, tins		5.25 @	5.50
one brand, in bottles		6.25 @	6.50
rectified		5.75 @	6.10
Petit grain, French		7.50 @	8.25
South American		3.75 @	3.80
Pimento		2.75 @	2.85
Pine needle, Sylvestris		2.25 @	2.30
Rose, natural	℔ oz.	28.00 @	—
artificial		2.50 @	3.00
Rosemary flowers, French	℔ lb.	1.50 @	1.55
Spanish		1.25 @	1.30
Sandalwood, East India		13.50 @	14.00
West Indies (Amyris)		Nominal	
Sassafras, natural, U. S. P.		2.00 @	2.25
artificial		41 @	42
safrol		48 @	52½
Savin		6.00 @	6.50
Snake root		15.00 @	20.00
Spearmint		5.50 @	5.75
Spruce		1.10 @	1.15
Tansy		4.00 @	4.10
Terpineol		1.15 @	1.25
Thyme, red, French		1.75 @	1.80
white, French		2.00 @	2.15
Vetivert, Bourbon		Nominal	
Java		30.00 @	34.00
Wintergreen (sweet birch)		3.75 @	4.00
synthetic		85 @	1.05
leaf (gaultheria)		5.25 @	5.50
Wormseed, Baltimore		10.00 @	11.00
Wormwood		5.25 @	5.50
Ylang ylang, Manila		26.00 @	28.00
Bourbon		11.50 @	15.00

PERFUME BASES.

Almond meal, French, powdered, per lb.	$0.60
Bergamot peel, whole	—
powdered	—
Cassia flowers, whole	1.50
powdered	2.00
Lavender flowers, French, selected	.85
Oak moss, whole, selected	.75
powdered	1.25
Orange flowers, whole	2.00
Patchouly leaves, whole	1.00
powdered	1.50
Red Rose leaves, French, whole	1.25
powdered	1.35
Sandalwood, selected, powdered	.60
Vetivert root, whole	1.25
powdered	1.75
White Rose buds, French, whole	.50
powdered	.75

WAXES.

Bayberry		36 @	37
Beeswax, white, pure		63 @	65
crude, light		44 @	45
dark		42½@	43
refined, light		47 @	48
dark		46 @	47
Candelilla		44 @	45
Carnauba, flor		94 @	95
No. 1		91 @	92
No. 2, regular		85 @	86
No. 2, North Country		84 @	85
No. 3, chalky		66 @	67
No. 3, North Country		76 @	77
Ceresin, yellow		17 @	18
white		18 @	19
Japan		26½@	27
Montan, crude		35 @	36
bleached		Nominal	
Ozokerite, crude, brown		35 @	36
green		Nominal	
refined, white		Nominal	
refined, yellow		Nominal	
American, refined, white		Nominal	
yellow		Nominal	
black, 164 degree		60 @	61
182 degree		78 @	79
Paraffine, crude, 103@105 deg. m. p.		8½@	9
118@120 deg. m. p.		9¾@	10
124@126 deg. m. p.		10¾@	11
refined, domestic, 118@120 deg., m. p.		12¾@	13
125 deg., m. p.		12½@	13
128 deg., m. p.		12¾@	13
133@135 deg. m. p.		15 @	15½
135@137 deg., m. p.		15½@	15¾
refined, foreign, 125 m. p.		Nominal	
130 m. p.		15 @	16
135 m. p.		15½@	16
140 m. p.		20 @	25
Spermaceti, block		30 @	31
cakes		31 @	32

CHEMICALS, INDUSTRIAL.

Alum, ammonia, lump	℔ cwt.	4.50 @	8.00
ground		4.00 @	8.50
powdered		4.75 @	9.00
potash, lump	℔ lb.	11¼@	12
chrome ammonia		18 @	19
chrome potash		20½@	21
Alumina sulphate, iron free		3½@	4
commercial		2 @	3½
Aluminum hydrate, light		17 @	18
heavy		11 @	12
Ammonia, aqua, in carboys	℔ lb.		
16 deg.		6 @	8
20 deg.		7 @	9
26 deg.		8½@	10½
chloride. (See ammoniac sal)			
anhydrous		Nominal	
nitrate		Nominal	
Ammoniac, sal, gray		Nominal	
granulated, white		Nominal	
lump		Nominal	
Antimony, needle		13½@	14
oxide		15 @	16
sulphuret red		25 @	26
golden		28 @	30
crimson		45 @	47
Arsenic, white		9 @	12
red		45 @	55
Barium chloride, 80 per cent. ton		65.00 @	70.00
99 per cent.		85.00 @	100.00
Bleaching powder, 300/500 lb.		5½@	6
Brimstone, long ton		30.00 @	—
Blue vitriol, 99 per cent.	℔ lb.	9½@	9¾
88@99 per cent.		9¼@	9½
Bordeaux mixture, paste	℔ lb.	13 @	14
Cadmium sulphide, yellow, cwt.		2.00 @	2.25
Calcium carbide	℔ lb.	15½@	16
Calcium, chloride, 70@75 per cent., fused	℔ ton.	22.00 @	24.00
Carbon tetrachloride, in dms.	lb.	30 @	38
Chlorine, gas, liquid	℔ lb.	7½@	20
Chrome acetate, 20 deg.		10 @	11
Copper, carbonate		30 @	31
Sulphate (see blue vitriol)			
Copperas		2 @	2¼
Cream tartar, crystals	℔ lb.	68½@	73
powdered		69 @	73½

Ethyl acetate, commercial	℔ gal.	Nominal	
Ferric chloride, 40 deg. crystals, barrels		14 @	16½
40 deg. liquid, carboys		6½@	7
Fluorspar, washed gravel, 85 per cent.	℔ ton.	70.00 @	—
powdered, No. 1, 90 p. c.		75.00 @	—
white lump, 98@99 p. c.		85.00	@90.00
Glauber's salt	℔ lb.	2 @	2½
Iron, nitrate of, commercial	℔ lb	2 @	2¼
true		9 @	9¼
Lead, acetate, brown broken	lb.	15½@	16½
white crystals		17 @	17½
white broken		16½@	17
granular		16¾@	17¼
arsenate, paste, according to package		15 @	18
arsenate, powdered, according to package		31 @	36
nitrate, C. P.		85 @	—
Lime, acetate	℔ cwt.	4.00 @	4.05
Lime, hydrate	℔ lb.	Nominal	
Lime, sulphur solution	℔ gal.	15½@	19½
Nickel oxide	℔ lb.	60 @	70
Nickel salts, single	lb.	16 @	17
double		14 @	15
Phosphorus, red		75 @	1.15
yellow		50 @	90
Potash, bichromate (see Natural Dyestuffs)			
chlorate, crystals		40 @	41
powdered		40 @	41
carb., calcined, 80@85 p. c.		35 @	38
calcined, 85@90 per cent.		38 @	40
calcined, 90@95 per cent.		40 @	50
calcined, 96@98 per cent.		55 @	75
calcined, 60@65 per cent.		28 @	30
carbonate, hydrated, 80@85 per cent.		85 @	95
caustic, 88@92 p. c. works		70 @	72
70@75 per cent, works		60 @	62
nitrate		27 @	31
permanganate, technical		1.75 @	2.00
U. S. P. See Pharmaceutical Chemicals.			
prussiate (see Natural Dyestuffs)			
Salt cake, ground, bbls	℔ ton.	35.00	@40.00
unground		25.00	@30.00
Saltpeter, granulated	℔ lb.	27 @	27½
powdered		27½@	28
crystals		31 @	31½
Soda, acetate (see Natural Dyestuffs)			
ash, light 58 p. c., in bags		2½@	2⅝
barrels		3¼@	3½
dense, 58 p. c., in bags		3½@	3⅝
barrels		3⅝@	4
bicarbonate		3 @	3½
bichromate (see Natural Dyestuffs)			
bisulphite, powdered	℔ lb.	5 @	6½
35@38 per cent. liquid		1¾@	2½
caustic, 70@78 p. c., solid		4½@	4¾
70@78 p.c., ground	℔ lb.	5 @	5½
76 p. c., flake		6 @	6½
74 per cent.		4¼@	4¾
60 per cent.		3½@	—
chlorate		18 @	25
cyanide, 100-lb. cases		30 @	40
fluoride		17 @	18
hyposulphite (see Natural Dyestuffs)			
nitrite, 96@98 per cent.	℔ lb.	27 @	30
phosphate, commercial (see Natural Dyestuffs)			
prussiate, yellow (see Natural Dyestuffs)			
sal	℔ cwt.	1.40 @	2.00
silicate, 60 degrees	℔ lb.	Nominal	
40 degrees		2½@	—
sulphide, 60 p.c., fused	℔ lb.	Nominal	
30 per cent. crystals		Nominal	
sulphite		5½@	6
Sugar of lead. (See acetate of lead.)			
Sulphur, refined	℔ cwt.	1.90 @	4.05
Tin, bichloride	℔ lb.	28 @	29
crystals (see Natural Dyestuffs)			
oxide		90 @	1.00
Zinc, carbonate		18 @	20
chloride		15 @	15½
dust (see Natural Dyestuffs)			
sulphate		5 @	6½

Acids.

Acetic, 28 p. c., bbls	℔ cwt.	4.91 @	5.16
56 per cent., redistilled		9.32 @	9.57
glacial, 99 per cent.		19.50	@19.75
80 per cent.		15.15	@15.40
Acetylsalicylic, bulk. See Aspirin.			
Aqua fortis (see Nitric).			
Battery, 6@ deg., sulphuric		Nominal	
Benzoic, ex toluol (see Coal Tar Intermediates)			
Boric, crystals, bbls		13¼@	15
granulated		13¼@	15
powdered		13¼@	15
Butyric, tech. (60 per cent.)		1.45 @	1.55
Camphoric		4.30 @	4.50
Carbolic, U. S. P., car lots		44 @	—
drums		46 @	47
tins		47½@	50
bottles		51 @	53
Chromic, technical		1.20 @	1.25
U. S. P.		1.25 @	1.50
Chrysophanic		6.20 @	6.40
Cinnamic		Nominal	
Citric, crystals, domestic, mfrs.		82 @	82½
powdered		82½@	83
Cresylic (see Coal Tar Intermediates)			
Formic, 75 per cent.	℔ lb.	36 @	—
Gallic U. S. P.		1.60 @	1.65
Hydrochloric, C. P.		Nominal	
Hydrofluoric, 30 p. c., bbls		8 @	8¼
48 per cent., in carboys		11 @	11¼
52 per cent., in carboys		12 @	12¼
Lactic acid, 22 per cent.		6 @	7
44 per cent.		15 @	16
8th revision, U. S. P.		2.15 @	2.25
9th revision, U. S. P.		2.25 @	2.40
Mixed, No. 1	℔ cwt.	6.90 @	—
No. 2		3.10 @	—
Molybdic, C. P.	℔ cwt.	6.90 @	7.40
Muriatic, 18 deg., carboys	℔ lb.	1.90 @	2.15
20 degrees		2.05 @	2.30
22 degrees		2.55 @	2.80
Nitric, 36 deg. Bé., carboys,	℔ cwt.	6.60 @	6.85
38 degrees		7.15 @	7.40
40 degrees		7.75 @	8.00
42 degrees		8.50 @	8.75
43 degrees		8.90 @	9.15
Oleum, 20 p.c., tank cars	℔ ton.	32.00 @	—
Oxalic, American	℔ lb.	41 @	42
Norwegian		45 @	46
Picric (see Coal Tar Intermediates)			
Phthalic, anhydride (see Coal Tar Intermediates)			
Phosphoric, 85 per cent.		45 @	50
50 per cent.		35 @	40
Pyrogallic, resub		3.25 @	3.50
crystals		2.95 @	3.20
Salicylic (see Coal Tar Intermediates)			
Sulphuric, 50 degrees, bulk, tanks	ton.	14.41 @	—
51 degrees		14.78 @	—
52 degrees		15.09 @	—
53 degrees		15.44 @	—
54 degrees		15.97 @	—
55 degrees		16.14 @	—
56 degrees		16.49 @	—
57 degrees		16.86 @	—
58 degrees		17.23 @	—
59 degrees		17.61 @	—
60 degrees		18.00 @	—
66 degrees		28.00 @	—
Sulphurous	℔ lb.	6 @	6½
Tannic, U. S. P.		1.40 @	1.50
technical		65 @	80
Tartaric, crystals		80 @	95
powdered		85 @	98

COAL TAR BASES, INTERMEDIATES, AND COLORS.

Acid, benzoic, ex-toluol	℔ lb.	2.80 @	2.90
cresylic, 95@97 p. c.	℔ gal.	1.15 @	1.20
50 p. c.		75 @	80
25 p. c.		40 @	45
H	℔ lb.	3.20 @	3.40
naphthonic, refined		1.20 @	1.30
technical		1.00 @	1.10
picramic		2.25 @	2.35
picric		Nominal	
salicylic, technical		70 @	85
U. S. P.		90 @	1.00
sulphanilic, technical		32 @	34
refined		42 @	44
1:3:6		1.00 @	1.20
Alpha-naphthol, crude		1.00 @	1.10
refined		1.50 @	1.60
Alpha-naphthylamine		60 @	65
Aniline oil		28 @	30
Aniline oil for red		1.15 @	1.20
Aniline salt		43 @	45
Anthracene, 80 per cent.		Nominal	
Benzaldehyde, technical		3.50 @	4.00
F. F. C.		5.50 @	6.00
U. S. P.		4.00 @	4.25
Benzidine base	℔ lb.	1.75 @	1.85
sulphate		1.40 @	1.45
Benzol, water white	℔ gal.	22 @	27
Benzyl chloride, refined	℔ lb.	2.00 @	2.05
technical		2.25 @	2.40
Beta-naphthol, sublimed		85 @	90
distilled		65 @	70
resublimed		1.10 @	1.15
crude		55 @	60
U. S. P.		1.20 @	1.30
Beta-naphthylamine, technical		1.65 @	1.70
sublimed		2.65 @	2.70
Creosote oil, 25 per cent.	℔ gal.	45 @	55
15 per cent.		35 @	37
Cresol, U. S. P.	℔ lb.	18 @	20
ortho-cresol, crystals		35 @	40
Dichlorbenzol		15 @	20
Diethylaniline		4.00 @	4.25
Dimethylaniline		75 @	85
Dinitrobenzol		40 @	42
Dinitrochlorbenzol		40 @	45
Dinitronaphthaline		55 @	60
Dinitrophenol		55 @	60
Dinitrotoluol		65 @	75
Diphenylamine		1.05 @	1.10
"G" salt		85 @	1.60
Metanitraniline		1.25 @	1.45
Metanitroparatoluidine		5.50 @	6.50
Metaphenylenediamine		1.85 @	2.05
Metatoluylenediamine		2.00 @	2.25
Monochlorbenzol		19 @	21
Monoethylaniline		1.65 @	1.85
Monomethylaniline		Nominal	
Naphtha, solvent	℔ gal.	18 @	25
Naphthaline, flake	lb.	9 @	9¼
ball		10 @	11½
Naphthylamin disulphonic acid		1.00 @	1.10
Nitrobenzol		19 @	20
Nitronaphthaline		45 @	50
Nitrotoluol		55 @	60
Ortho-dichlorbenzol		15 @	20
Ortho-nitro-phenol		1.40 @	1.60
Ortho-nitro-toluol		75 @	85
Ortho-toluidin		95 @	1.10
Para-amidoacetanilid		1.50 @	1.75
Para-amidophenol base		3.75 @	4.25
HCl		4.25 @	5.00
Para-dichlorbenzol		15 @	20
Paranitraniline		1.60 @	1.80
Paranitroacetanilid		1.15 @	1.25
Paranitro-orthotoluidine		5.50 @	—
Paranitrophenol		1.50 @	1.80
Paranitrotoluol		1.50 @	1.60
Paraphenylenediamine		3.50 @	4.00
Paratoluidine		2.00 @	2.25
Phthalic acid anhydride, sublimed		4.00 @	4.50
crude		3.40 @	3.70
Phenol, U. S. P.		43 @	48
Phosgene		1.50 @	1.75
"R" salt		1.00 @	1.25
Resorcin, technical		5.00 @	7.00
Schaeffer's salt, f. o. b. works		65 @	85
Sodium naphthionate		1.40 @	1.50
Tetranitromethylaniline		2.50 @	2.75
Tolidin		2.50 @	3.00
Toluidine mixture		85 @	90
Toluol, pure	℔ gal.	1.50 @	1.55
Xylol, pure	℔ gal.	45 @	55
commercial		30 @	35
Xylidine	℔ lb.	85 @	90

Coal Tar Colors.

Acid, black	℔ lb.	1.50 @	2.75
black 4B		2.75 @	—
blue (conc.)		6.00 @	—
blue B		4.50 @	5.50
blue R		2.75 @	3.50
blue 4B		7.00 @	—
blue G		10.00	@12.00
Bordeaux		2.25 @	2.50
brown		1.25 @	2.50
brown B		2.50 @	—
brilliant green		Nominal	
canary yellow G		2.50 @	4.00
fast red A		1.25 @	1.50
fast red E		2.50 @	—
green		6.50	@15.00
green GG		12.00	@14.00
magenta		4.25	@10.00
maroon		2.50 @	3.00
navy blue		4.50 @	6.00
orange A		95 @	1.25
orange II		55 @	1.00
pink		5.50 @	6.00
red		5.75 @	—
red 4B		2.25 @	3.75
scarlet		1.25 @	1.75
scarlet Y		2.00 @	—
violet		5.00 @	8.25
violet 3AN		5.00 @	—
violet 4B		6.75 @	7.50
violet 6B		8.00 @	—
violet 10B		10.00 @	—
violet R		2.50 @	—
yellow		2.00 @	2.25
yellow 2G		3.50 @	—
yellow R		1.25 @	—
Alizarin blue		6.50 @	8.00
brown		6.00 @	8.00
brown DD		1.25 @	3.00
brown RC, paste		— @	—
khaki		3.00 @	—
navy blue		6.50 @	8.25
navy blue G		8.00 @	—
red		3.50	@11.75
yellow		1.35 @	1.75
yellow C		3.00 @	5.00
yellow RW		2.50 @	—
Algol blue		50.00	@65.00
violet		14.00	@15.00
Alkali blue		12.00	@14.00
violet		12.00	@18.00
Alpine red		5.00 @	7.00
yellow		1.75 @	7.50
yellow		1.75 @	7.50
yellow 6G		1.75 @	2.00
Amaranth O		2.50 @	3.50
Amidine yellow		4.50 @	6.00
navy blue		3.00 @	4.00
blue 2B		2.25 @	—
green B		3.75 @	4.75
Anthracene brown G		2.00 @	—
red		6.00 @	7.00
Auramine O		5.00 @	5.25
II		6.00 @	—
Azo crimson		7.25 @	—
chrome blue B		5.00 @	5.50
carmine		5.00 @	6.00
cyanine, 5R		4.25 @	—
navy blue		— @	—
yellow		3.00 @	3.50
rubein		2.75 @	—
Basic blue, bright		3.00 @	4.00
magenta		7.75 @	8.00
orange		2.50 @	3.00
purple		5.25 @	5.50
Benzo brown		2.00 @	—
dark green		4.00 @	5.75
fast orange		4.50 @	7.50
fast scarlet 4BS		17.00 @	—
fast yellow A		1.50 @	—
navy blue		3.00 @	3.50
orange		3.50 @	5.00
purpurine		4.00 @	8.00
purpurine 4B		3.00 @	5.50
purpurine 5B		5.25 @	6.50
sky blue		6.50 @	8.00
Biebrich alizarin blue		4.00 @	4.50
Bismarck brown R		1.25 @	1.75
brown Y		90 @	1.25
Bordeaux red B		2.25 @	2.50
Brilliant croceine scarlet 3B		3.00 @	—
acid red		3.25 @	3.75
green crystals		— @	—
Bright acid green		9.75	@10.00
Carmoisine		3.00 @	4.00
Cerasine red		Nominal	
Chinoline yellow		5.00	@11.00
Chrome black A, paste		2.75 @	3.00
black BCA, paste		1.75 @	2.75
blue BCA, paste		2.75 @	—
blue		3.00 @	3.75
brown		2.50 @	3.50
red		2.00 @	3.50
violet		2.75 @	3.00
yellow		2.00 @	3.50
yellow 2R		2.75 @	3.50
yellow 3G		2.00 @	3.00
Chrysamine		2.00 @	—
yellow G		2.50 @	4.50
Chrysoidine		1.10 @	2.00
yellow G		2.00 @	—
Chrysophenine		7.00 @	8.50
Chrysophenine G		10.75	@12.00
Ciba violet		Nominal	
Cibanone brown		9.00	@10.00
Congo red		2.25 @	3.00
red W		3.25 @	4.25
Corvoline BT		3.25 @	3.50
Cosmos red		2.50 @	—
red SH		2.50 @	3.50
Cotton blue		25.00	@28.00
red 5B		4.25 @	5.00
orange G		— @	—
orange R		— @	—
yellow		— @	—
Croceine scarlet		1.75 @	3.50
scarlet R		3.10 @	3.60
Crystal violet		4.00 @	9.50
Cyanine blue		4.25 @	5.00
Cyanol blue		Nominal	
Diamine blue BB		2.00 @	4.50
brown		5.00 @	6.00
Bordeaux		4.50 @	6.00
Bordeaux B		4.75 @	—
fast yellow		4.60 @	—
green		3.85 @	4.00
pink		9.00 @	14.00
rose		9.00	@14.00
scarlet		1.00 @	1.75
skyblue, FF		6.25 @	8.00
yellow		7.00 @	8.00
Diamond black		2.75 @	3.00
Diazo brilliant scarlet 10B		8.50 @	9.50
Direct black		1.15 @	1.50
blue		2.00 @	5.00
blue B		2.50 @	3.50
blue BB		1.40 @	—
blue H		2.25 @	2.75
blue L		2.75 @	3.00
blue 3		3.25 @	4.50
blue 2B		2.00 @	2.75
brown		2.75 @	3.00
brown C		3.50 @	—
brown 2G		3.15 @	4.00
brown MB		2.50 @	3.50
brown No. 22		2.75 @	—
brown R		3.00 @	3.25
Bordeaux		2.00 @	4.00
fast yellow		3.00 @	3.25
fast pink		4.00 @	4.75
garnet		3.75 @	—
green		2.50 @	3.75
green J		3.75 @	—
green J EE Y		3.35 @	—
gray		4.00 @	4.50
khaki		3.75 @	—
orange		2.50 @	3.75
orange 3G		3.50 @	—
orange R		2.50 @	—
pink		2.00 @	5.00
maroon		4.00 @	5.00
red		2.75 @	5.75
red 4B		5.75 @	—
red maroon		2.75 @	3.25
red imperial		3.30 @	—
red salmon		3.30 @	4.00
rubine		3.75 @	4.25
sky blue, fast to acid		5.50 @	6.00
sky blue FF		11.75 @	—
sky blue G		3.50 @	4.00
yellow		2.50 @	4.00
yellow G		3.00 @	3.50
yellow R		1.75 @	2.00
violet		2.75 @	—
violet B conc		2.75 @	3.75
violet R conc		2.90 @	—
yellow C		2.50 @	2.75
Eosine		9.00	@15.00
B		—	@14.50
J		9.00 @	—
Y		10.00	@11.50
Erythrosine		12.50 @	—
Fast blue		4.00 @	5.00
acid brown (red shade)		4.25 @	—
crimson		3.00 @	4.00
light yellow 2G		3.75 @	—
neutral gray		3.75 @	—
Ponceau orange		1.60 @	2.75
red		1.65 @	2.50
red A		3.00 @	—
yellow G		1.50 @	2.00
Fu black		3.00 @	4.00
blue		7.00 @	8.00
brown		3.00 @	5.00
Indanthrine blue (per sample)		25.00 @	—
Induline base		2.00 @	3.00
oil sol., lumps		1.50 @	—
water sol., R		2.00 @	—
water sol., C		1.40 @	—
spirit sol., R		1.75 @	—
spirit sol., C		1.15 @	—
blue		2.50 @	3.00
Magenta, crystals		7.50	@10.00
powder		7.75 @	9.00
Malachite green, powder		6.00 @	8.25
crystals		7.25 @	—
Metanil yellow		2.40 @	—
Methyl violet base		3.25 @	8.25
violet base conc		5.00 @	—
violet B		3.50 @	—
violet 2B		3.50 @	—
violet 5B		3.50 @	—
violet 4B Ex		3.00 @	4.00
violet 4B		3.75 @	—
violet 5B		5.35 @	—
5B		6.50 @	—
6B Ex		7.50 @	—
6B crystals		7.25 @	8.00
Methylene blue		3.00 @	5.00
B		3.50 @	3.75
B concentrated		4.25 @	4.50
BB (A)		5.25 @	5.50
green		8.00 @	9.00
gray B		— @	—
gray R		— @	—
Naphthol blue 3K		11.50	@12.00
Naphthol green		3.00 @	3.50
yellow S		4.00 @	2.25
Naphthylamine red		6.00 @	7.00
Nigrosine jet, base		90 @	—
oil sol., lumps R		55 @	—
oil sol., lumps C		65 @	—
water sol., R		90 @	—
water sol., C		95 @	—
spirit sol., R		80 @	—
spirit sol., C		85 @	1.10
Nigrosine blue, base		85 @	—
blue oil sol., lumps R		55 @	—
blue oil sol., lumps C		60 @	—
blue water sol., R		65 @	85
blue water sol., C		90 @	—
blue spirit sol., R		75 @	1.00
blue spirit sol., C		80 @	—
Oil black		95 @	—
green		2.00 @	3.00
mahogany red		3.00 @	3.50
orange		2.00 @	3.00
scarlet		2.00 @	—
yellow		2.00 @	2.50
Orange A		.95 @	1.25
flavine		1.00 @	1.25
Oxamine blue BB		7.25 @	8.50
pure blue		7.50 @	8.25
red B		6.75 @	7.75
Patent blue		20.00	@25.00
blue A (type)		25.00 @	—
Phosphine 2G		7.00	@10.00
Ponceau GG		2.00 @	2.50
Primuline		5.50 @	6.50
Prussian blue, C. P.		80 @	1.00
Red, for leather, brilliant scarlet shade		3.75 @	4.00
Rocceline		2.50 @	3.00
Rhodamine		15.00 @	—
B extra conc		85.00 @	—
B60		7.50	@10.00
6G		90.00 @	—
Scarlet pulp		75 @	2.00
2R		1.25 @	2.00
Safranine		6.00	@14.00
B		5.50 @	7.00
BL		9.00 @	9.25
Y		6.00 @	7.50
Silk blue S		2.50 @	—
black P X		1.00 @	—
Soluble blue R		6.75 @	—
blue type		9.75	@10.25
Sulphur black		40 @	9.00
blue		2.50 @	3.00
blue 5G		1.25 @	1.50
blue R		1.50 @	3.00
brown		40 @	80
green		1.50 @	2.50
green 3G		2.25 @	2.70
kahki G		90 @	1.25
kahki R		90 @	1.25
olive		90 @	1.25
yellow		1.00 @	2.75
yellow G		3.00 @	3.50
Tartrazine		1.50 @	2.00
Thionone flavine		4.50 @	5.00
Ultramarine blue		28 @	1.00
Union navy blue		3.00 @	4.00
dark blue		2.75 @	3.50
dark green		3.00 @	4.50
deep navy blue B		4.00 @	4.25
Vesuvine B		1.75 @	2.25
Victoria blue		10.00	@17.00
blue B		8.00 @	9.00
blue R		8.50 @	9.50
blue 4R		11.00	@12.00
green		4.75	@5.00
red		7.00 @	8.00
violet 4BS		4.50 @	6.00
yellow		7.00 @	8.00
Wool, green S		6.50 @	7.50
green W (mixture)		4.50 @	6.00

NATURAL DYESTUFFS.

Acetate of soda	℔ lb.	30 @	—
Albumen, egg		1.20 @	1.25
blood		80 @	90
vegetable		65 @	67
granular, egg yolk		45 @	47
spray egg yolk		70 @	75
Alizarine red S, type		10.00	@12.00
reduced		9.50 @	—
Alumina, chloride		4¼@	4½
Annatto, fine		33 @	34
seed		8½@	11
Antimony, salt, 75 per cent.		Nominal	
65 per cent.		70 @	72
47 per cent.		Nominal	
Barwood chips		6 @	8
chips		4 @	6
Bichromate of potash		42 @	45
Bichromate of soda		23 @	24
Brazil wood	℔ ton.	52.00	@70.00
Camwood chips		18 @	20
Cochineal, Teneriffe, silver	℔ lb.	Nominal	
rosy, black		Nominal	
gray, black		Nominal	
fine Madras		Nominal	
Cuba wood—See Fustic.			
Cudbear, No. 1, 200-lb. blocks	lb	30 @	40
Cutch, bales		21 @	23
boxes		Nominal	
slabs		Nominal	
Dextrine, imported potato		Nominal	
British gum		Nominal	
domestic potato		20 @	20½
corn		8 @	8½
Divi divi	℔ ton.	70.00	@80.00
Flavine	℔ lb.	1.00 @	1.10
Fustic, stick	℔ ton.	50.00	@70.00
young root		Nominal	
chips		4 @	6
Gambier, common	℔ lb.	21 @	23
plantation		20 @	21
Singapore, cubes		28 @	31
Java, cubes		19 @	19½
Hypernic (see Brazil Wood)			
Hypo. of soda	℔ cwt.	2.00 @	3.60
Indigo, Bengal	℔ lb.	3.00 @	3.75
Kurpahs		2.25 @	2.75
Guatemala		2.25 @	2.75
Madras		80 @	1.00
Manila		70 @	80
Oudes		2.25 @	2.75
synthetic, 20 p. c., paste		1.15 @	1.25
Indigotine		4.00 @	—
Logwood, stick	℔ ton.	50.00	@55.00
roots		Nominal	
chips	℔ lb.	4 @	6
Madder, Dutch	℔ lb.	26 @	30
Myrabolans	℔ ton.	Nominal	
Nitrate of iron, commercial	℔ lb.	2 @	2¼
true		9 @	9¼
Nutgalls, blue Aleppo		Nominal	
Chinese		30 @	32
Orentine	℔ ton.	60.00 @	—
Persian berries	℔ lb.	Nominal	
Phosphate of soda, com.		4 @	4½
Prussiate of soda, yellow		40 @	42
Prussiate of potash, yellow		55 @	1.60
red		2.30 @	2.50

(Continued on page 8.)

ESTABLISHED 1915
ERSCO SERVICE
TRADE MARK

Wire Us for Prices on the Following Materials Which are Offered Subject to Prior Sale:

WILL SELL

10 CASKS BI-CHROMATE OF SODA
Prompt shipment from Chicago

1,000 TONS CRYSTAL COPPERAS
Equal Monthly January-June inclusive
F. O. B. Ohio Point

1 CAR HYPOSULPHITE OF SODA, GROUND, PEA CRYSTALS OR REGULAR
Prompt Shipment. F. O. B. Middle Western point

5 CARS BLEACH
1 car October, 3 cars November, 1 car December. F. O. B. Ohio point

1 CAR 60-62 SODIUM SULPHIDE
Prompt shipment. F. O. B. New York

1 CAR 30-32 SODIUM SULPHIDE
Prompt shipment. F. O. B. New York

GOLDEN AND CRIMSON ANTIMONY
1,400 and 4,500 lbs., respectively
Prompt shipment

620 LBS. ALUMINUM STEARATE
Prompt shipment

8 CARS DYNAMITE GLYCERINE
Equal monthly September-December inclusive

100 TONS BARIUM NITRATE
Prompt shipment

3 TANKS PROCTER & GAMBLE'S RE-DISTILLED RED OIL
16c F. O. B. Ivorydale
Prompt shipment

4 CARS PROCTER & GAMBLE'S RE-DISTILLED RED OIL
17⅛c F. O. B. Ivorydale
Prompt shipment

90 BBLS. PURE HANKOW CHINA WOOD OIL
28c F. O. B. Coast. Rolling from Coast

2 TANKS LIGHT MENHADEN FISH OIL
October-November shipment
$1.39 F. O. B. Boston

10 BBLS. HANKOW CHINA WOOD OIL
Prompt shipment from Cleveland

200 TO 300 BBLS. SOYA BEAN OIL
Prompt shipment from Cleveland

50 BBLS. COMMERCIAL PRIME NEATSFOOT OIL
Prompt shipment from New York City

OIL OF MUSTARD, U. S. P.
Prompt shipment. Also contract over balance of year and next year

WILL BUY

1,200 BBLS. BICARBONATE OF SODA OVER 1919

30 CARS OR MORE COPPERAS

FRESH BLEACH OR 30-35 PER CENT. AVAILABLE

CHLORINE BLEACH

100 TONS CAUSTIC POTASH

1 CAR AMMONIA ALUM

60-62 AND 30-32 SODIUM SULPHIDE IN CARLOAD LOTS

1 CAR HYPOSULPHITE OF SODA CRYSTALS

75 TONS TECHNICAL EPSOM SALTS

60 TONS U. S. P. EPSOM SALTS

CARBOLIC ACID, U. S. P. WHITE CRYSTALS. CARLOAD LOTS

E. R. SMEAD COMPANY

OFFICES
ROCKEFELLER BUILDING

CLEVELAND, OHIO

WAREHOUSES
SCRANTON ROAD

NEW YORK MARKET PRICES.

(Continued from page 6.)

Quercitron, rough bark, f. o. b. works	℔ ton.	13.00	@15.00
roasted bark		19.00	@22.00
ground bark		27.00	@30.00
Red sanders, chips	℔ lb.	12 @	14
Sago flour	℔ lb.	9½@	10½
Soluble oil, 50 per cent.		12 @	15
75@85 per cent.		18 @	20
Starch, corn, powdered		6 @	7
pearl		7 @	7½
Japanese potato		13 @	13¾
rice		12½@	—
wheat		Nominal	
domestic potato, bags		12½@	13
Sumac, Sicily, No. 1 (28 p. c. tannic acid)	℔ ton	93.00	@95.00
domestic, ground		70.00	@ —
Tapioca flour	℔ lb.	15 @	15½
Tin, crystals		65 @	70
Turmeric, Madras		10¼@	10½
Aleppy		13 @	13½
Pubna		Nominal	
China		8¾@	9
Turkey red oil		12 @	20
Zinc, dust		14 @	16

Dye Extracts.

Archil, double	℔ lb.	16 @	18
concentrated		23 @	30
Barberry, French		35 @	40
Brazil wood —See Hypernic.			
Chestnut, ordinary, 25 p. c. tannin		2½@	3¾
clarified, 25 p. c. tannin		3½@	4¼
Cutch, liquid		12 @	14
solid, 65 per cent., basis f. o. b. Seattle		11¼@	11½
Divi divi, 25 p. c. basis		5½@	6
Fustic, solid		26 @	31
liquid, 51 degrees		15 @	16
crystals	℔ lb.	30 @	33
Gall		30 @	32
Gambier, liquid, 25 p. c. tannin		17 @	—
Hematine crystals	℔ lb.	23 @	25
extract		20¼@	22¼
Hemlock, 25 per cent. tannin		5½@	6
Hypernic, solid		45 @	—
51-degree liquid		30 @	35
Indigo		26 @	30
Larch, crystals, 50 per cent.		8 @	8½
liquid, 25 per cent.		3¾@	4½
Logwood, solid		20½@	22
liquid, 51 degrees		16 @	1. ⅝
42 degrees		9½@	10½
crystals		22½@	27½
Mangrove, 25 per cent. cutch		10 @	15
liquid, 25 per cent.		8 @	10
Muskegon, 25 per cent. tannin		1¼@	2½
Myrabolan, solid, 50 per cent.		Nominal	
liquid, 25 per cent.		Nominal	
Oak bark		4¼@	5
Osage orange, 51 deg. liquid		12 @	—
Palmetto		4 @	5
Persian berry		Nominal	
Quebracho, solid		Nominal	
35 per cent. tannin		Nominal	
Quercitron, solid		13 @	14
liquid, 51 degrees		7 @	7½
Spruce, 25 per cent. tannin		1 @	1¼
Sumac, stainless, Sicilian		11 @	12
domestic, 51 deg.		5¾@	6¼
42 degrees		4½@	5

FERTILIZER MATERIALS.

Ammoniates.

Ammonia, sulph	℔ 100 lbs.	4.75 @	—
futures		Nominal	
Fish scrap, dried, 11 p. c. ammonia and 14 p. c. bone phosphate, f. o. b. factories	℔ unit	7.25 &	20
wet, acidulated, 6 p. c. ammonia, 3 p. c. phosphoric acid, f. o. b. fish factories		7.00 &	75
Ground fish scrap, 11 to 12 p. c. ammonia, 15 p. c. B. P. L., f. o. b. fish factory		7.75 &	20
Tankage, 11 p. c. and 15 p. c. f. o. b. Chicago		6.80 &	10
Tankage, 10 and 20 p. c., f. o. b. Chicago, ground		6.80 &	10
Tankage, 9 and 20 p. c., f. o. b. Chicago, ground		6.80 &	10
Tankage, concentrated, f. o. b. Chicago, 14 to 15 p. c.		6.60 @	6.70
blood, f. o. b. Chicago		6.90 @	—
Garbage, tankage, f. o. b. Chicago		5.50 @	5.75
Hoofmeal, f.o.b. Chicago	℔ unit	6.70 @	6.75
Dried blood, 12-13 p. c. ammonia, f. o. b. New York		7.20 @	7.25
Tankage, New York		7.20 @	7.25
Garbage tankage, New York		5.50 10 &	2.00
Nitrate of soda, 95 p. c., spot,	℔ 100 lbs.	4.32½@	—
96 per cent.		4.45 @	—

Phosphates.

Acid, phosphate, bulk	℔ ton	16.00 @	—
Southern ports		16.25	@17.50
Bones, rough hard		30.00	@32.00
soft steamed, unground		24.00 @	—
ground, steamed, 1¼ p. c. ammonia and 60 p. c. bone phosphate		31.00 @	—
ditto, 3 and 50 p. c.		37.00	@37.50
raw, ground, 4 p. c. ammonia and 30 p. c. bone phosphate		50.00 @	—
South Carolina phosphate rock, kiln dried, f. o. b. Ashley River		Nominal	
Florida land pebble phosphate rock, 68 p. c., f. o. b. Tampa, Fla		5.00 @	—
Florida land pebble phosphate rock, 75 p. c., f. o. b. Tampa		7.50 @	8.00
Florida high grade phosphate hard rock, 77 p. c., f. o. b. Florida ports		8.50 @	9.00
Tennessee phosphate rock, f. o. b. Mt. Pleasant, domestic, 78@80 p. c.	℔ ton	7.00 @	8.00
78 p. c. guaranteed	℔ ton, 2,240 lbs.	7.50 @	8.00
78 p. c.	℔ ton, 2,240 lbs.	7.50 @	8.00
68@72 p. c., ground so that 90 p. c. will pass through 100-mesh screen	℔ ton, 2,000 lbs.	7.50 @	8.00

Potashes.

Muriate of potash, 38@42 per cent., basis 40 per cent., in bags	℔ ton.	182.00 @	—
Muriate of potash, 80@85 per cent., basis 80 per cent., in bags	℔ ton	260.00	@310.00
Muriate of potash, min., 90@95 per cent., basis 80 per cent., in bags		280.00	@325.00
Muriate of potash, min. 98 per cent., basis 80 per cent., in bags		280.00	@325.00
Sulphate of potash, 90@95 per cent., basis 90 per cent., in bags		325.00	@350.00
Double manure salt, 48@53 per cent., basis 48 per cent., in bags		Nominal	
Manure salt, min. 20 per cent., K_2O, in bulk		Nominal	
Hardsalt, min. 16 per cent., K_2O, in bulk		Nominal	
Kainit, min. 12.4 per cent., K_2O, in bulk		Nominal	
First sorts potashes	℔ lb.	22½@	25

Pyrites.

Spanish, crude, unwashed fines, per unit, averaging 48@52 p. c. of sulphur, ex ship	℔ unit	17 @	—
Spanish smalls, washed fines		17 @	—
Furnace size lump ore, washed, averaging 48@52 p. c. of sulphur		17 @	17½
Spanish lump, washed		17 @	17½
Furnace size, high grade, practically non-arsenical; less than 1-16 p. c. arsenic		17 @	17½
Lump, unbroken, Spanish ore		17 @	17½
Domestic concentrates, f. o. b. mill		30 @	33

NOTE.—Foreign prices on pyrites are based on the freight rates. The seller pays up to 2 shillings and the buyer the difference. Freights today are from 35 to 40 shillings per ton.

COMPARATIVE PRICES OF PRINCIPAL ARTICLES.

The prices of the following principal articles at the close of the market on the corresponding date of the three previous years will be of interest:—

Chemicals.

	1917.	1916.	1915.
Bleach, per lb	$0.02	$0.04¼	$0.01¾
Brimstone, crude, long tons	45.00	35.00	22.00
Cream tartar, crystals	.50	.40	.50
Kainit, min., 12.4 p. c.	Nom.	40.00	40.00
Oxalic acid, in casks	.46	.60	.40
Potash, caustic, 88@92 p. c.	.85	.85	.39
chlorate, crystals, f. o. b. works	.55	.48	.30
muriate of, basis 80 p. c., in bags, ℔ ton.	325.00	320.00	245.00
Sal soda	1.10	1.00	.60
Soda ash, 58 p. c., light bags, lbs.	.04	.03¼	..
caustic, 74@76 p.c., lb.	.09¾	.03¾	.05
chlorate	.24	.28	.14
bicarb., Am.	2.50	1.65	1.00
nitrate, 95 p. c., spot, per 100 lbs.	4.50	2.95	2.50
Sulphuric acid, 66 p. c.	.01¾	..	..

Paints.

	1917.	1916.	1915.
Barytes, white prime, foreign, per ton	$38.00	$38.00	$19.00
Litharge, Am., powd	.12½	.09¼	.06
Orange, mineral, Am.	.15	.12	.08¾
Paris green, bulk, kegs	.50	.27	.13
Venetian red, lbs.	.02¾	.02	.75
White lead in oil, less than 500 lbs., per 100 lbs.	12.75	9.75	6.75
Whiting, com.	1.25	.70	.50

Drugs.

	1917.	1916.	1915.
Alcohol, 190 U. S. P.	$4.32	$2.66	$2.56
Borax, crystals, bbls., gran.	.07¼	.07¼	.05¾
Belladonna, atropa root	3.50	2.50	1.75
Carbolic acid, U. S. P., crystals, dms.	.42	.58	1.40
Caffeine, alkaloids	11.00	13.00	10.25
Cocaine, crystals	8.00	4.25	3.50
Camphor, ref. bbls., Am.	.79½	.69½	.42
Epsom salt, tech., ℔ 100 lbs.	4.00	1.87½	4.50
Glycerine, C. P., bulk	.64	.42½	.26
Gum, arabic sorts, amber, cleaned	.32	.15	.16
Ipecac, Rio	2.60	3.00	4.00
Leaves, belladonna	1.55	1.40	1.40
senna, Tinnevelly	.16	.25	.25
Morphine, 5 oz. cans, per case	10.80	5.50	5.00
Opium, jobbing lots, per case	30.00	10.80	7.75
Oil, codliver, Norwegian	120.00	138.00	80.00
peppermint, one brand in bottles, bottle	3.85	2.75	2.40
wintergreen, synthetic	.75	1.70	2.10
Potash, permanganate	4.00	1.70	1.10
Quicksilver, jobbing lots	1.75	1.05	1.35
flask lots	115.00	75.00	88.00
Seeds, canary, Smyrna	.08	.07	.05¾
caraway	.61	.25	.09¾
celery	.28	.24	.35
Soda, salicylate	.85	1.75	3.15
Thymol	17.25	9.50	12.00
Iodide	16.00	.61	..

Oils.

	1917.	1916.	1915.
Cottonseed, prime, yellow summer	℔ lb. $0.162	$0.10	$0.061
Cocoanut, Ceylon, lb.	.17	.13	.09
Lard, prime winter, per gallon	2.00	1.08	.84
Olive, denatured	℔ gal. 2.00	.95	.85
Sperm, bleached, winter, cold test, 38 deg.	1.52	.80	.70
Whale, bleached, winter	.97	.64	.50

Dyestuffs.

	1917.	1916.	1915.
Acetate of soda	$0.10½	..	..
Aniline oil	.28	$0.30	$1.40
Cochineal, Teneriffe, gray black	.75	.75	.60
Cutch, bales	.10	.09	.12
Gambier, spot, ex store, lb.	.15½	.09½	.12½
Indigo, Bengal	3.75	3.50	3.00
Logwood, sticks, ton	38.00	..	..
Prussiate potash, yellow	1.20	.65	.85
Soda, bichromate	.28¼	.28	.16
prussiate	.34	.45	.41
Starch, corn, bags	6.30	2.65	2.25
Sumac, Sicily, 28 p. c. tannic acid	90.00	70.00	65.00

Miscellaneous.

	1917.	1916.	1915.
Spirits, turpentine, gal.	$0.44	$0.47	$0.41
Rosin, com. str., 280 lbs	6.00	6.15	3.40
Linseed cake, dom.	ton 47.50	36.00	37.50

Business Opportunities.

(Continued from page 17.)

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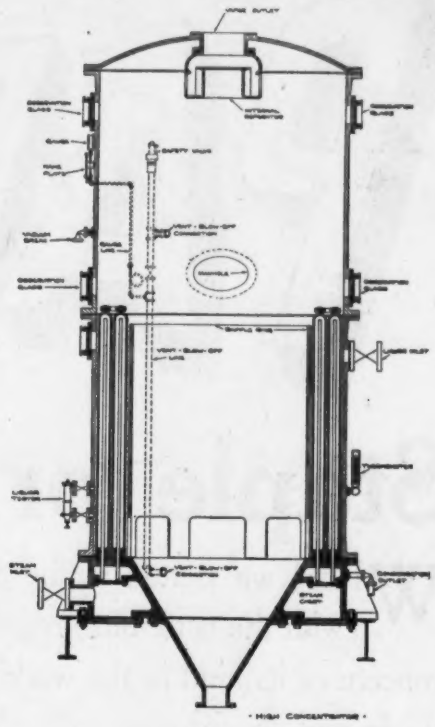

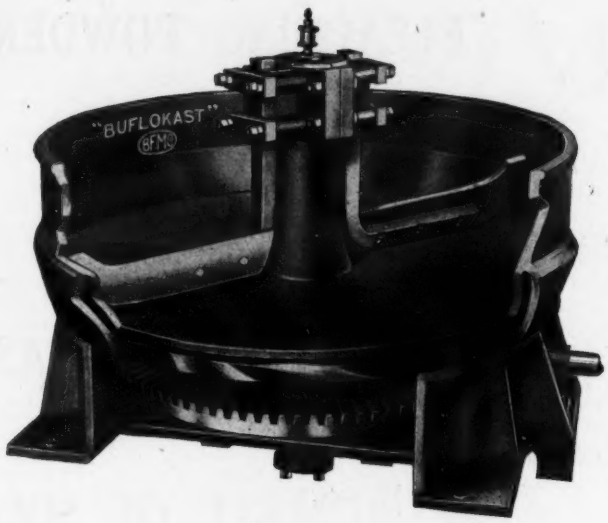

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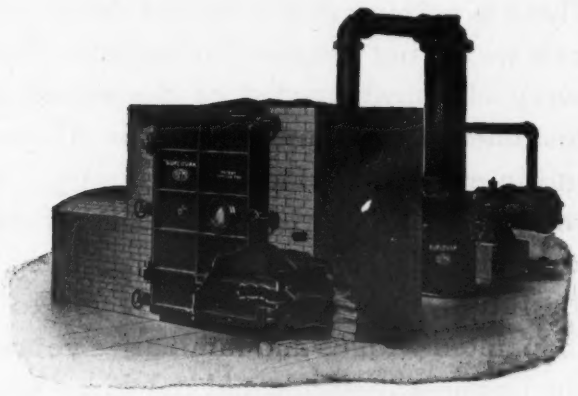

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Minimum rate, $2 per insertion; if more than 48 words, 25 cts. for each additional six words. Payable in advance. Display rates on application.

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An experiencecd executive to take charge of New York office of Drug and Chemical manufacturing and jobbing house. Must have wide acquaintance in the trade; be able to transact foreign and domestic business. Must possess talent and initiative and be of high character. A real opportunity for the right man. Address BOX 827, care of this paper.

Pulp and dry color chemist with some knowledge of paint. State full experience, with references, etc. Address BOX 824, care of this paper.

Old established manufacturer desires to get in touch with a man thoroughly familiar with the production of synthetic aromatic chemicals used in the soap and perfumery trade. To the right man an attractive offer will be made. Address replies to BOX 823, care of this paper.

Experiencced Paint Grinder to take full charge of Grinding room in up to date Paint Plant in Western Pennsylvania. Must understand the grinding of Enamels, and all Paint products. Apply, giving salary required, together with references, to BOX 822, care of this paper.

WANTED

Salesman (Christian) by old established dry color house to call on the Western Printing Ink, Paint and Varnish Trade, etc. Salary and commission. State experience. All communications will be strictly confidential. Address reply to R. S. I., Box 820, care of this paper.

Working paint foreman to take charge of paint department. Address BOX 818, care of this paper.

Glass—A working foreman for a plant manufacturing chemical products put up in glass. Address with particulars. BOX 815, care of this paper.

Experienced dyestuff salesman for New York and New England States. State age, experience and salary desired. MANUFACTURER, BOX 831, care of this paper.

Metanitraniline Chemist, one who understands complete process in commercial quantities plant in New York City. Salary no object if we get the right man. Address BOX 840, care of this paper.

POSITIONS WANTED

Pharmaceutical Chemist; draft exempt; at present employed; is open for engagement in an executive capacity; 20 years' manufacturing experience with the largest houses in the country; thoroughly experienced in all branches. Address THYMAL, BOX 845, care of this paper.

Technical Chemist, Ph. D.; age 48; held positions in dye, print, finishing works, laboratory and managing; acquainted with dry distillation of wood, edible fats, research work, specialized for making economies; seeks position of responsibility and trust. Address G. EPPRECHT, Ridgewood, N. J.

Salesman, at present successfully calling on druggists (not technically) in Pennsylvania and Ohio, wants for family reasons to become engaged in Chicago, or northern Illinois territory, as representative of an old established concern. Has never been laid off from any position. Age, forty-eight. Address BOX 811, care of this paper.

Chemist, Colorist, with 2½ years' actual manufacturing experience on azo and sulphur colors, based on 9 years' experience in dyeing and demonstrating; wish to change; past two years in full charge over color department with leading concern; 29 years old; draft exempted; first-class references. BOX 836, care of this paper.

(Continued on page 8)

OFFERS REQUIRED FOR

Liquid Petrolatum

27-28 GRAVITY

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ANDERSON EXPELLERS
HYDRAULIC PRESSES
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1—Direct Heat Rotary Dryer, 3 ft. x 15 ft., portable and self-contained with oil tank burner and stack complete.
1—Direct Heat Rotary Dryer, 3 ft. x 18 ft., complete.
1—Direct Heat Rotary Dryer, 3 ft. x 30 ft., complete with stack.
1—Direct Heat Rotary Dryer, 20 in. x 9 ft., complete.
1—Ruggles-Coles double shell type B2 Dryer, 4 ft. x 21 ft.
1—Louisville Rotary Steam Heated Dryer, 5 ft. x 20 ft., complete.
1—Louisville Rotary Steam Heated Dryer, 6 ft. x 25 ft., complete.
1—Ord Standard 72 in. Fertilizer Cooker or Dryer with Steam Jacket and stirrer.

KILNS.

1—Rotary, 6 ft. x 60 ft., complete with stack.
1—Rotary, 5 ft. x 48 ft., complete with lining.
1—Rotary, 5½ ft. x 50 ft., complete with lining.

MILLS.

1—Tube Mill, 4 ft. x 22 ft., complete with silex lining, pebbles and automatic feeder.
1—Tube Mill, 4 ft. x 10 ft., complete with silex lining, pebbles and automatic feeder.
1—28 in. Schultz-O'Neill pulverizer with dust collector and piping.
1—6 ft. x 22 in. Hirdrige conical mill with automatic feeder, stone lining and pebbles.
1—Tube Mill, 6 ft. x 8 ft. 6 in. with stone lining.

PRESSES.

3—500 Ton Hydraulic Presses.
1—Hydraulic Scrap Press, new, 24 in. ram x 30 in. movement, with iron basket and pump.

EVAPORATORS.

1—Double effect Kestner Evaporator, with 14—1½ in. x 22 ft., brass tubes in each effect.
1—Double effect Evaporator with 100—1¼ in. x 7 ft., copper tubes in each effect. Horizontal type.
1—Double effect Crystallizer with stirrers, coils and salt filters.
1—Complete double effect vertical evaporator with salt filters, 108—2½ in. x 4 ft. 3 in. iron tubes in each effect.
1—Complete triple effect vertical evaporator with 150—4 ft. x 1½ in. iron tubes in each effect.

FILTER PRESSES.

1—Sweetland Filter Press, 24 in. diameter, 29 plates.

TANKS, STILLS AND KETTLES.

1—Copper Six Section Still, 3 ft. x 26 ft., with coil condenser and copper dephlemater.
1—Reflux Condenser, 3 ft. diameter x 22 in. deep.
2—Jacketed, Agitated Open Top Kettles, 4 ft. 6 in. x 7 ft. x 5-16 in. steel.
2—Cone bottom Tanks or digesters, 6 ft. x 10 ft. 6 in. x ½ in., manhole in cover and drop door at bottom.
1—Flat bottom Tank or digester, 4 ft. x 7 ft. x ⅜ in., door in top. Grate and cleaning door in bottom.
1—Round bottom, open top, cast iron Kettle, 72 in. x 36 in. x ½ in.
2—Duriron Cauldrons, 38 in. diameter x 22 in. deep.
6—Round closed copper Tanks, 300 gal., 500 gal. and 950 gal.
1—Closed tank, 4 ft. 2 in. x 7 ft. x 5-16 in. with stuffing boxes on ends for shaft.
1—Open Steel Tank, 5 ft. x 6 ft., ¼ in. steel, manhole in cover.
2—Open Top Tanks, 8 ft. x 8 ft. x 6 ft.
40—Square, open top, heavy, oil storage tanks of different sizes.
2—Steel steam jacketted crystallizing pans, 8 in. x 8 ft. x 24 ft. x ¼ in.

MISCELLANEOUS.

1—Steel cylinder 78 in. x 108 ft. x ¾ in. Good for 200 lbs. per. Doors at each end. Track and car inside.
1—Complete cotton seed oil plant.
1—Two stage Clayton, steam driven air compressor, 7 in. x 10 in. x 8 in.
1—Fertilizer screen, 1 in. mesh, 5 ft. x 14 ft. 6 in., with shaft, 5 in. x 19 ft., with bearings, schain and sprocket for driving.

Fuller description furnished on request.

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We are DISMANTLING CHEMICAL PLANTS

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FOR SALE for IMMEDIATE SHIPMENT

1—Jacketed Auto-Clave, Block-Tin Lined, 110 gals.; Stirrer; with or without lining.

PRESSURE & STORAGE TANKS.

1—150 gal. Pressure Tank, 30 in. dia. x 4 ft.
1—225 gal. Pressure Tank, 30 in. dia. x 6 ft. 6 in.
1—400 gal. Pr. Tank, 3 ft. 6 in. x 6 ft. 6 in.; ⅝ in. Steel.
1—850 gal. Pr. Tank, 4 ft. x 9 ft.; ⅝ in. Steel.
2—2,000 gal. Pr. Tanks, 43 in. x 27 ft.; Dome & M. H.
1—3,000 gal. Pr. Tank, 5 ft. x 20 ft.; ½ in. Steel.
1—3,000 gal. Pr. Tank, 6 ft. x 20 ft.; ½ in. Steel.
2—5,000 gal. Pr. Tanks, 6 ft. x 25 ft.; ½ in. Steel.
8—16,000 gal. Storage Tanks, 10 ft. 6 in. x 25 ft.

KETTLES & PANS.

1—25 gal. Jacketed Steel Kettle.
4—50 gal. Jacketed C. I. Kettles.
2—50 gal. Jacketed Enamelled Kettles.
1—100 gal. Jacketed Steel Kettle.
3—150 gal. Jacketed C. I. Mixing Kettles.
2—180 gal. Jacketed Rect. Kettles.
1—200 gal. Jacketed Mixing Kettle.
1—Wooden Suction Filter
6—70 gal. Copper Tilting Kettles.
4—70 gal. Plain C. I. Kettles.
1—100 gal. Dur-Iron Kettle.
1—125 gal. Plain C. I. Mott Kettle.
1—150 gal. Buffalo C. I. Kettle, 2 in. thick.
3—1,000 gal. Buffalo Mixing Kettles.
12—Dur-Iron Pans, 36 in. dia. x 9 in. deep.
12—C. I. Tanks, 5 ft. x 10 ft. x 2 ft. deep.
1—Steel Tank, 7 ft. x 10 ft. x 3 ft. deep.

AIR COMPRESSORS.

1—Marsh Air Compressor, 3 in. x 7 in., Belted.
1—Blaisdell Compressor, 4 in. x 5 in., Dble. Actng.
1—Ingersoll-Rand, 6 in. x 6 in., Belted.
1—Clayton Compressor, 10 in. x 10 in. x 10 in.

STILLS.

1—Badger Subliming Still, Condenser and Receiver; Block-Tin Lined on Copper.
1—Cast Iron Still, 700 gal.
1—1,000 gal. Vacuum Still Complete.

CENTRIFUGAL EXTRACTORS.

1—20 in. Basket Centrifugal Extractor.
3—30 in. basket American Extractors.
2—40 in. Cleveland Extractors, Belted.
1—36 in. galv. basket Tolhurst.
1—48 in. S. & U. Extractor, Iron basket.

DRYERS.

1—Devine Vacuum Dryer, 17 shelves.
1—Rotary Dryer, 30 in. x 17 ft.
1—Rotary Dryer, 36 in. x 25 ft.
1—Rotary Dryer, 22 in. x 15 ft.

MISCELLANEOUS.

1—35 H. P. Oil Engine.
Various H. P. Steam Engines.
Various H. P. New and Used Motors.
2—50 Ton Refrigeration Machines.
2,200 Feet 5 in. Flanged and Machined C. I. Pipe in 12 ft. Lengths, with Fillers and Elbows.
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In first-class condition. Quick Shipment. Selected by our force of Engineers as being of Exceptional value.

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230-A—One 6 ft. diameter x 10 ft. 6 in. high, steam jacketed on side.

CENTRIFUGALS

110-B—One American Tool, 36 in. copper basket, bottom discharge.

702-A—One Watkins, 26 in. diameter, brass basket.

1079-A—One Hydroextraction type, 36 in. diameter, steel basket, bottom discharge.

DRYERS (Direct Heat Rotary)

154-G—One 6 ft. x 30 ft., double shell.
1070-E—One 4 ft. x 20 ft.
484-F—One 4 ft. x 30 ft.
292-A—One 5½ ft. x 30 ft.
1043-A—One 4 ft. x 40 ft.
1118-A—One 4½ in. x 25 ft.
969-D—Two 4 ft. x 26 ft.
969-E—One 3 ft. x 24 ft.

PANS

482-A—Forty-eight cast iron steam jacketed evaporating pans, 6 ft. 10 in. x 3 ft. 10 in. x 5¼ in., new.

229-A—Two Bach type crystallizers, by Kilby Mfg. Co., 729 cu. ft. capacity.

KETTLES

294-C—Five cast iron, 42 in. diameter x 5 ft. deep, with agitator, no jacket.

EVAPORATORS

1016-A—Two zeumba single effect, 2,220 lbs. water per hour.
110-D—Three Griscom Russell Evaporator, quadruple effect, 100 tons of water per 24 hours.
196-A—Four Lilie triple effect, 100,000 gal. copper tubes per day, 24 hours.

PEBBLE MILLS

494-B—One Alasing, 28 in. x 21 in.
211-A—Two Gates, No. 7.

NITRATORS

635-A—50 gal. nitrator.
510-B—500 gal. nitrator.

TILLS

110-I—One copper, 2 ft. x 4 ft., 40 gal. capacity with condenser and pump.
884-BC—Cast iron, 150-200 gal.
295-E—One Phenol Still, 5 ft. x 6 ft.
295-H—One Phenol, 900 gal.
820-A—Twelve steam jacketed stills, 9 ft. 6 in. diameter, 17 in. high, complete with fractionating columns, condensers and dephlegmators. Complete stills for acetone, alcohol, Phenol, Benzol, etc.

FILTER PRESSES

230-B—One Sweetland, 24 in. diameter, 14 leaves.
228-A—One Johnson, 16 in. x 16 in., closed delivery, 12 frames, 11 plates, ¾ in. thick, pump and gauge.
447-A—One Provost Filter Press, 36 in. x 36 in., 24 chambers, open delivery, self-washing type.
110-O—42 x 42, recessed plates, center feed, open delivery, fair condition.

KILNS

119-A—Two 6 ft. x 60 ft.
600-A—One 5 ft. x 50 ft.
969-E—One 3 ft. x 24 ft.

MISCELLANEOUS EQUIPMENT

1073-AB—Vesuvius Sulphur Burners, 1-6 ton, 2-9 ton.
685-A—Glens Falls Rotary Sulphur Burner.
1051-B—Complete Glycerine Plant for 80 per cent. crude, capacity, 125 lbs. per hour. Tanks of all descriptions.
195—Two Carbondioxide, generating plants. Large number of storage and pressure tanks.
One machine for weighing and filling packages.
117-AA—One Smith-Vaile Cooler, 5 high crutcher rolls, 24 in. wide, top roll, 14 in. diameter and grooved; others 16 in. diameter.
117-BB—One Smith-Vaile, 52 in. x 16 in. cooker.
117-CC—One Automatic steam cake former.
117-DD—One 12 lb. box Smith-Vaile Oil Press, each cake weighs about 15 lbs.
110-E—Ingersoll Rand Air Compressor, steam driven, 14x14x18, capacity, 387 cu. ft. per minute at 100 lb. pressure, water intercooler; guaranteed complete with unloader, Brooklyn, N. Y.
110-M—Jeffrey Swing Hammer Crusher, 24 in. x 18 in., type "A"; in good condition. Location Jersey City, N. J.
723-A—Liberty-Greenway Oil Separator, size 6, type "N"; never been used.

This list is constantly changing because the machinery and apparatus is all first class. Watch this column for changes.

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Immediate Shipment

8—30 in. Centrifugals
1—42 in. Centrifugal
1—60 in. Centrifugal
1—14 in. x 14¼ in. x 18 in. Air Compressor
1—3 ft. x 12 ft. Rotary Dryer
1—4 ft. x 50 ft. Rotary Dryer
2—4 ft. x 8 ft. Drum Dryers
1—25,000 gal. Triple Effect Evaporator
1—40,000 gal. Triple Effect Evaporator
1—Sweetland No. 9 Filter Press
1—Sweetland No. 10 Filter Press
1—18 in. x 18 in. Shriver Filter Press
1—20 in. x 30 in. Shriver Filter Press
2—Zenith Rotary Filters
1—5 ft. x 51 ft. Rotary Kiln
10—1,200 gal. Jacketed Kettles
2—15,000 gal. Jacketed Agitated Kettles
1—6 x 4 x 6 Brass Lined Duplex Pump
1—5 ft. x 5 ft. Sulphonator

10 STEEL STORAGE TANKS 10 FT. DIA. X 15 FT.

Filter Presses, Pulverizers, Tanks, *We Purchase Entire Plants.*

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Open Top Tanks	1—5 ft. x 3 ft., 3-16 in., metal, 440 gal. capacity.	
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	1—8 ft. x 6 ft. 6 in., 3-16 in., metal, 2,440 gal. capacity.	
	1—4 ft. 6 in. x 10 ft., 3-16 in., metal, 1,169 gal. capacity.	
Closed Storage Tanks	2—6 ft. x 21 ft. 6 in., 7-16 in., metal, 4,568 gal. capacity.	
	2—6 ft. x 23 ft., 6 in., 7-16 in., metal, 4,970 gal. capacity.	
	3—7 ft. x 22 ft. 7 in., 7-16 in., metal, 6,477 gal. capacity.	

Filter Presses, Kettles, Mills, Mixers, etc., etc.

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Used equipment in good second-hand condition

1—Stevenson 9 ft. iron-frame Dry Pan.
1—Pair of Allis-Chalmers 36"x12" Crushing Rolls.
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Large assortment of chain and belt bucket conveyors, complete.
We have a large line of Foster, Knowles and Davidson single steam pumps; also engines, boilers, tanks, compressors, etc.

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Dia.	Height	Gauge Steel	Capacity.
7' 0"	x 7' 5" Vertical	No. 8	2100
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8' 8"	x 9' 6" Vertical	No. 8	4200
9' 11"	x 11' 0" Vertical	No. 8	6300
7' 8"	x 20' 0" Horizontal	No. 8	7100
8' 8"	x 19' 0" Horizontal	No. 8	8500

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SPECIAL: 32 Steel Tanks, Capacity 4200 Gallons, 8'8" dia., by 9'6" high, 3-16" shell, 3-16" heads, with manhole and four 2" pipe flanges.

We can also offer prompt shipment on tanks built to your Specifications

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Copper Crystalizing Tanks

Size 4 ft. x 6 ft.

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Size 4 ft. x 30 ft. Shell and Heads 3-4 in. thick.

All Above in Excellent Condition *Immediately Available*

Tennessee Copper Co., 61 Broadway, New York

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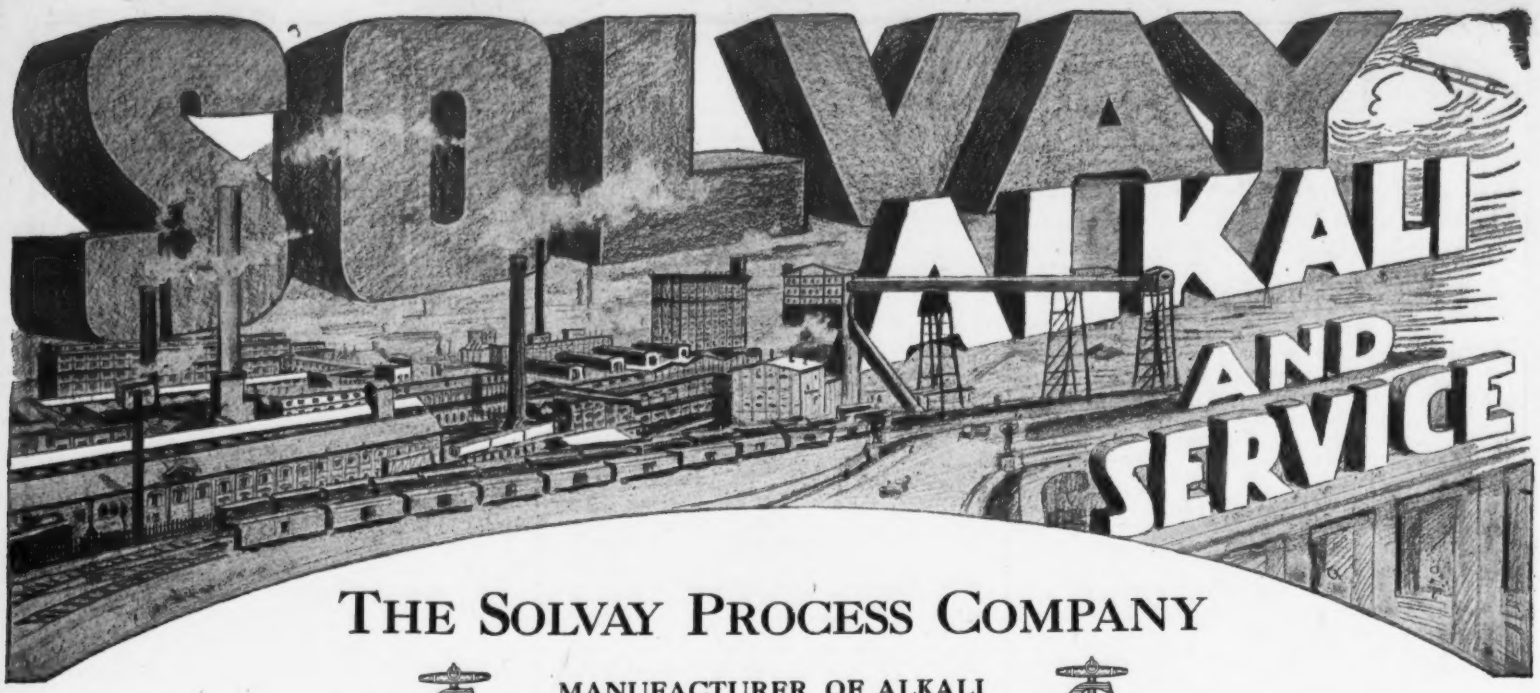
SACCHARINE

See Page 88



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At Syracuse, the Company maintains one of the most extensive and completely equipped Research Laboratories anywhere existing. For 36 years it has been engaged here in the scientific study of the improvement of alkalies, and of the adaptation of them to the many processes into which they enter.

The great improvement in Caustic Soda for Soap Makers and Mercerizers since the Caustic of 1881, which tested only 81% NaOH; the nice adjustment of density of Soda Ash for Glass Making, and the reduction of its dusting properties; the development of Solvay Snow-Flake Crystals (Sodium Sesquicarbonate) for laundries; these are examples of adapting the product to the purpose.

SODA ASH
58% Light
58% Dense
48% Ordinary
48% Special

CALCIUM CHLORIDE

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CAUSTIC SODA
76% Solid and Ground
74% Solid and Ground
70% 60%
70% Special
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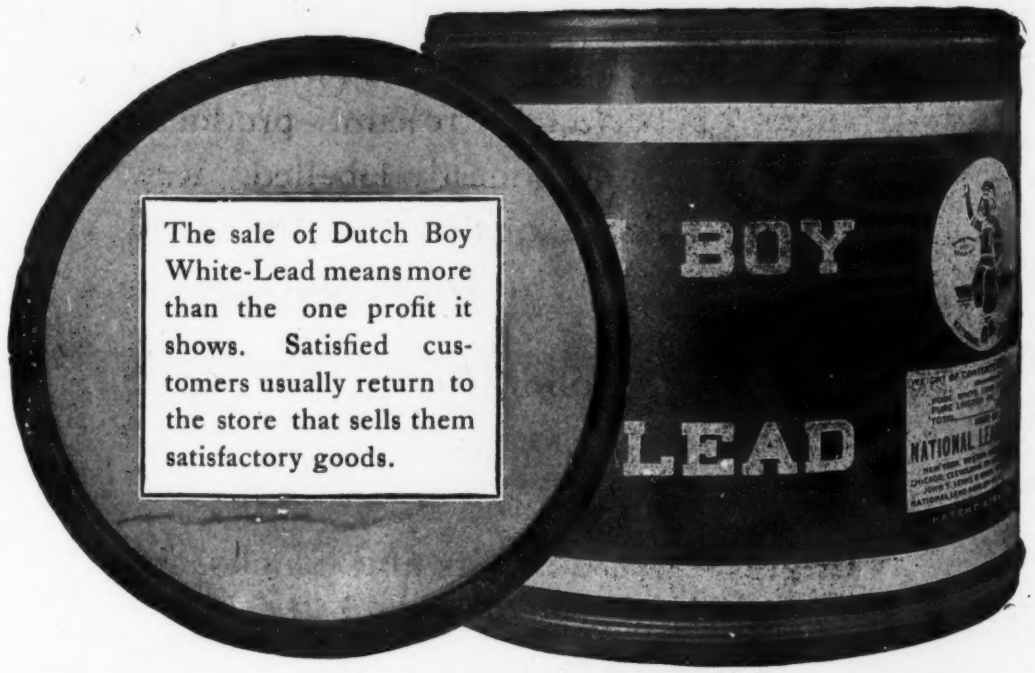
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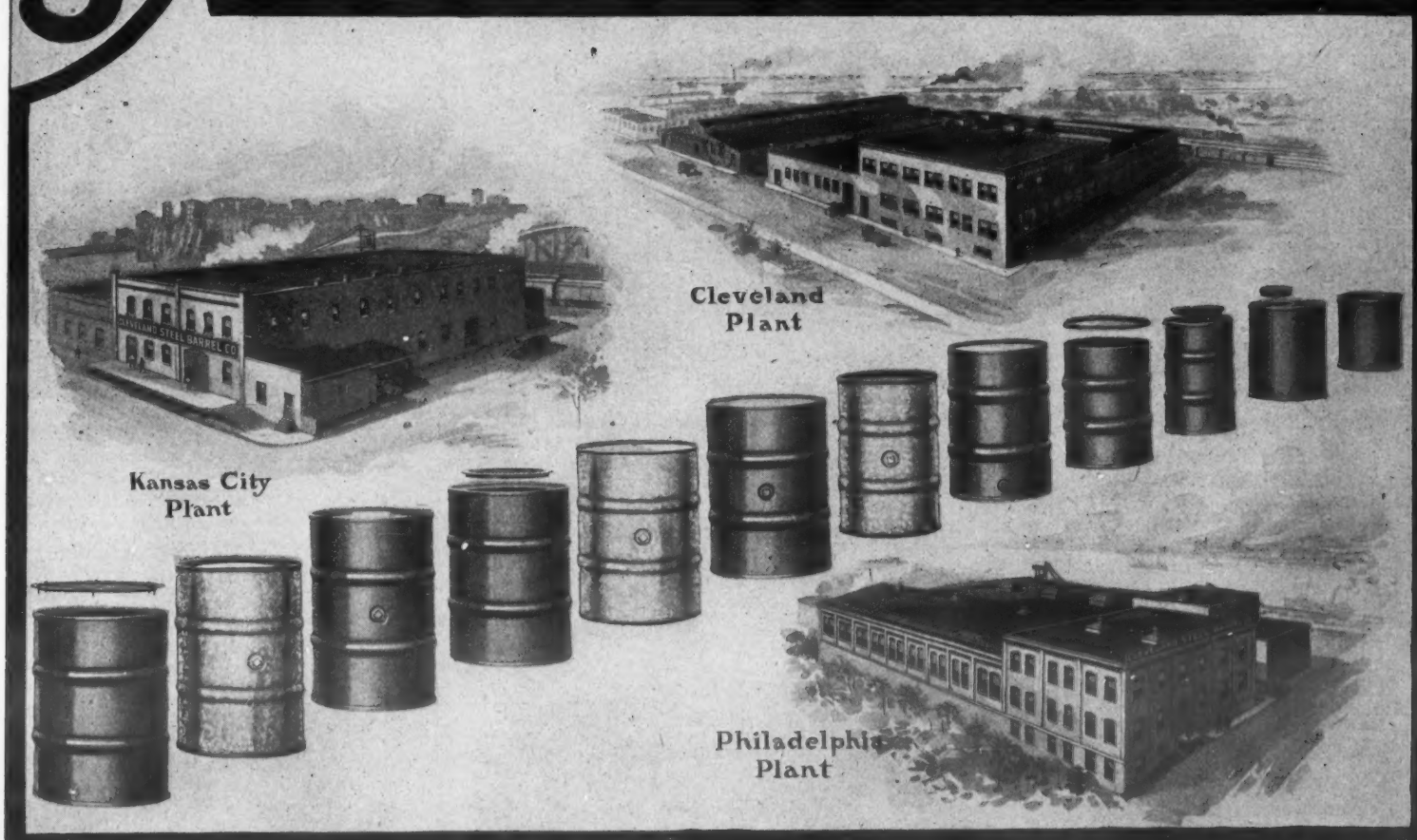

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LIQUID GRANITE (Floor Varnish)
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World's Largest Varnish Makers
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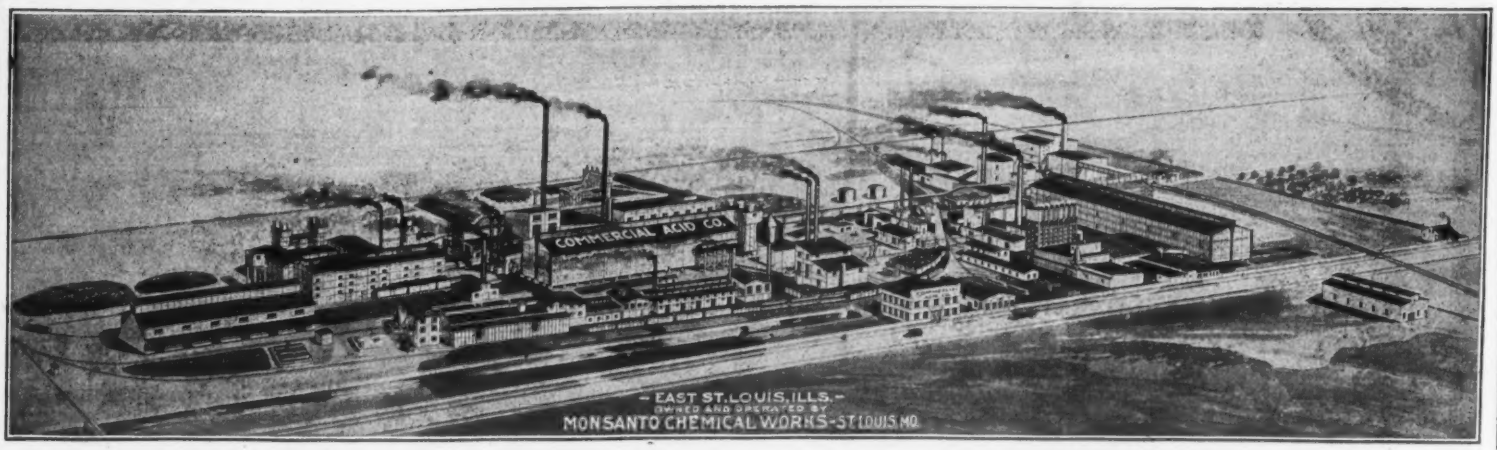
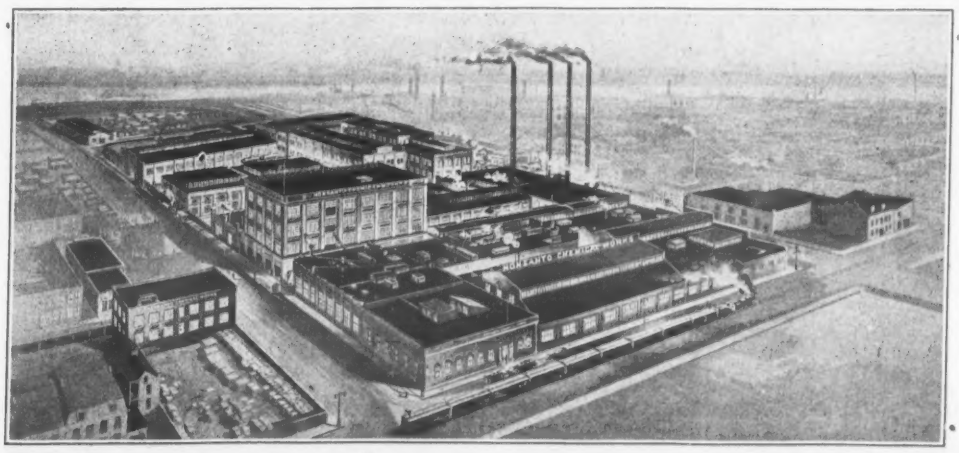
OLEUM
PHENOL



Works, East St. Louis, Ill. Owned and Operated by Monsanto Chemical Works, St. Louis, Mo.

Acetphenetidin (Phenacetin)
Acetyl Salicylic Acid (Aspirin)
Caffeine
Chloral Hydrate
Coumarin
Chrome Sulphate
Glycerophosphates (Calcium Sodium Potassium, Iron Magnesium, etc.)



Phenol
Phenolphthalein
Saccharin
Salicylic Acid
Salicylate Soda
Salol
Vanillin

MONSANTO CHEMICAL WORKS, Saint Louis NEW YORK: Platt and Pearl Streets

Oil, Paint and Drug Reporter

VOLUME 94. NUMBER 14. MONDAY, SEPTEMBER 30, 1918. 100 William St., New York

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ESTABLISHED 1871.

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QUESTIONABLE OR UNDESIRABLE ADVERTISEMENTS WILL NOT BE ACCEPTED.

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IMPORTANT TO SUBSCRIBERS.

Every subscriber to the Reporter will receive during the coming week a notice from the subscription department to the effect that hereafter all subscriptions must be paid *strictly in advance*.

It has been the practice in the past, while subscriptions to the Reporter have been strictly upon a cash basis, to make an allowance of not exceeding 60 days for such payment. With the new regulations of the War Industries Board stipulating that in the interest of paper conservation all free copies, sample copies and charge copies of every periodical must be eliminated, together with returns, it has now become necessary under such ruling to insist upon advance payment for subscriptions. The only alternative is striking the name of non-paying subscribers from our lists. The subscription department of the Reporter has always been glad to extend reasonable credit—under existing paper restrictions it is forbidden to extend such courtesy.

REPORTER TRADES WILL MAKE NEW MARK IN FOURTH LIBERTY LOAN DRIVE—QUOTA OF SUBSCRIPTIONS PUT AT FIFTY-SIX AND ONE-QUARTER MILLIONS.

The paint, varnish, drugs, chemicals, dyestuffs and allied trades have joined the drive against Berlin. The opening gun in the paint and varnish division was loaded with a $2,000,000 projectile.

Seldom is it that more representative groups of men in an industry are gathered in one common purpose than in the two great committtees of the paint and varnish and chemical, drug and dyestuff divisions of New York, and with the full weight of the industries back of them, the grand total in subscriptions at the close of the drive should exceed the quotas assigned.

Chairman Gates of the Paint and Varnish Committee sets a high mark of achievement—and yet a perfectly possible one—when he states:

"Think of the splendid effect upon our boys overseas and our allies if we can cable the news that the quota of the loan is virtually reached at the end of the first week of the drive."

The industries which the Reporter has the honor to represent will do their part—this is a truism—but the immediate necessity is for action today!

The chemical and allied industries of New York City must place subscriptions to Liberty bonds of the fourth loan amounting to $47,000,000.

The paint and varnish and allied industries must reach a total of $9,250,000.

The committees are keyed to the highest pitch of enthusiasm, and are seeking new records of accomplishment, and it behooves every subscriber to the loan in the industries cited, no matter through what agency he places his subscription, to notify some member of the committee of his industry or Chairman Gray or Chairman Gates. Only through this participation and co-operation can the exact facts be known and the proper credit given.

Lend your money to the Government—not only your spare money, but all the money you can spare.

APPEAL OF PAINT AND VARNISH INDUSTRIES FOR RECOGNITION AS ESSENTIAL NOW UNDER CONSIDERATION BY WAR INDUSTRIES BOARD.

The War Conference Committee of the Paint and Varnish Industry, of which William H. Phillips is chairman, has presented its brief to the War Industries Board in which it sets forth decisively, elaborately and in detail the claims of the industries for recognition as essentials. It is an eloquent appeal in the diversity of the applications of paint and varnish and allied products to the work of carrying on the war, and the scope of this relationship to war work, touching as it does upon fully 90 per cent. of war production, from ships to cartridges, will come as a surprise to many who pride themselves upon their knowledge of industrial relationships.

The brief, which is printed entire elsewhere in this issue of the Reporter, is now in the hands of the Paint and Pigment Division of the War Industries Board, of which Louis R. Atwood is acting chief in the absence through illness of Chief Russell S. Hubbard. No decision will be made immediately, pending further investigation as to just what work is now being done by the paint and varnish manufacturers of the country. A questionnaire is now being sent to the representatives of the paint, varnish, lead pigments, chemical color, dry paint and pigment, zinc oxide, lithopone, gum importing, shellac and turpentine industries—all of which are represented in the War Conference Committee to the end that the government advisers may know just what amount of business is being done, both on war contract and for other consumption.

The scope of the government work being transacted by these great industries is amazing.

> When all of the various governmental activities are taken into consideration including, in addition to the known war material production, such activities as shipbuilding, marine requirements, auto trucks, government housing, hospitals, factories for war supplies, tractors, electrical equipment, railway requirements, structural steel, fiber trunks and containers, metal products, engines and boilers, motors, agricultural implements, hardware, sewing machines, typewriters and adding machines, telephone equipment, machinery, munition factories, housing for farm materials and help, canning factories, printing inks (for Liberty Bonds, government documents, posters, etc.)—it is apparent that the use of paint and varnish extends into practically every industry and every community throughout the entire country in its direct or indirect relation to the war.

In fact, the memorandum appended to the brief, which cites only a part of the strictly war requirements of but three divisions of strictly government work, contains hundreds of items.

The paint and varnish industry from the outset of the war has met every demand made upon it—for personnel as well as for product. Without recompense other than the nominal dollar a year, some of the most efficient of its experts, both in manufacture and in distribution, have devoted their time solely to the work of assisting the government in its work of carrying on the war. Specifications for paints and varnishes, driers and fillers, oils and pigments, have been standardized solely through the unremitting effort of men who have relinquished their own remunerative business activities to do their part. Radical economies in the use of containers, in brand paints, in paper and packing and distribution, in fuel and in labor have been forced upon the industries by the necessity of the moment, and have been accepted in on the committee representing the paint and varnish industry.

In point of personnel, ability, thoroughness, self-sacrificing service the men making up this committee of the industries are their own argument for essential recognition.

This appeal for recognition as "essential" should not have been necessary—the whole weight of the argument is with the War Conference Committee. The daily work of the government departments is a record of their achievements.

We can not question the result of their appeal, for we are are convinced that in the everyday fruition of their obligations to the government as producers of essential commodities lies the surety of their recognition, without question and without delay.

SACCHARIN, MENTHOL AND CAMPHOR—THREE PROMINENT FACTORS IN DRUG MARKET PROMINENCE—OVERSEAS INFLUENCES AND POSSIBILITIES.

Three items have stood out above all others in the drug market during the week—camphor, menthol and saccharin. The two first have been notable for sharp uplifts, while the last was prominent because of its price disintegration. No one of the three affects seriously the activity of the drug market when considered as an entity, but each within its own sphere has witnessed movements indicative of conditions far from the ordinary.

Saccharin has shown a degree of speculative activity rare in this market. Quinine alone will bear comparison with the 'fore-and-aft movement of market prices, which features all developments in saccharin. The two are twins when the speculative factors in the market tire of an unremunerative inactivity. Great Britain dictates the market quotation to an extent which reacts on legitimate American trading. The American factor has been forced into a withdrawal by the lowering of the British embargo gate.

At once the spot market declined from prices close to $35 per pound to $23 per pound at the close of the week. Having retreated to strategic positions, the speculative element is now refitting its offensive to attack in force when the next breach appears in the line of British necessity. Eventually the British manufacturer of saccharin will be in a position to supply the needs of Great Britain, and then the position of the American holder will be—to say the least—interesting.

While the saccharin rout was virtually complete, an advance in force was achieved by menthol. At the beginning of the week it was possible to purchase isolated lots of menthol at $4.50 per pound—at most $4.70 per pound—the close found an equally small number of parcels available at $5.50 per pound, with the majority of holders' ideas close to $6 per pound, and expecting still higher prices. And the reason? As Mr. Micawber said: "That is a question to be asked." The trade has not attempted to figure out just why American importers allowed themselves to encounter such a faux pas.

The large, wholesome fact is that, according to well-informed factors in this market, the visible supply of menthol has been vastly overestimated.

For a period of months—from January 1 to August 5—the market remained at a virtual standstill, the material opening the year at $3.15 and closing on August 5 at $3.30 per pound. Without doubt, menthol had fallen into such a pass as to make possible shadings from these generally met quotations. In the meantime England not only imported an amount of material equal to her 1917 absorption, but in addition to this took 86,973 pounds excess—an amount practically identical with the falling off of imports to the United States. In fact, this decline in American importations amounted to 79,917 pounds.

While the English market was absorbing material, it remained within 5 or 10 cents per pound of the New York quotations. The answer most often giver to the question, "Why the advance?" is a reiteration of the "bear" reports sent out from

Japan—lower production, labor scarcity, typhoons, floods, fires, etc. As a matter of fact, England is a "long haul," and the British importer is willing to pay the freight charges which are lining the pockets of the Japanese shipping ring with rich war profits.

The American market was dull. Importers were reluctant to assume stocks of the sensitive material. The result is a shortage of goods which even high prices cannot compensate. At the close of the week the British market stands on a practical parity with the price citations in New York. Perhaps the War Trade Board will now permit the importation of excess English stocks—and in the same breath, it may not. Two hauls compassing half the circumference of the earth and the seven seas is not the shortest distance between two points and does not save tonnage.

As compared with saccharin and menthol, camphor walked the path of rectitude. The developments in both American and Japanese refined material were the logical result of turbulent labor conditions in Japan viewed and advantaged by the watchful eye and self-adding cash register of the Japenese Monopoly Bureau. The spot early in the week was assailed by a whirlwind demand from sections of the country directly catered to by the American refining interests. The domestic interests could not meet the contingency, and appealed to the spot market for material which was forthcoming, but at an advance of from $1.30 per pound to $1.75 per pound—the last named being the closing quotation on Japanese refined tablets and slabs.

Imports during the past week show that four times the amount of Nipponese refined gum was received in comparison with crude, and the American refiner appears strongly among the importers of the Rising Sun product. Crude in the refiner's stocks is negligible; he cannot meet his trade demands with his own product, and hence the policy of the Monopoly Bureau has been more firmly es- or lasting relief can be expected until the production of camphor, vegetable or synthetic, in the United States on a commercial basis becomes a fact.

REPORTER MARKETS DURING THE WEEK JUST CLOSED.

Paint and Paint Material.—The paint industry is to a great extent working for the United States Government, as in all lines a great deal of the business being done is on Government orders. The volume of this business is constantly increasing. Aside from this feature of the trade there is a quiet market. Prices, as a rule, have held steady this week. There was an advance of a cent a pound on red lead in oil.

Naval Stores.—The rosin market has stopped its wild advance, and rosin prices are the same as a week ago. The fact that the market has thus far been able to maintain such an unprecedented level and hold steady at the top is an evidence of its strength. There is little demand for turpentine, and the price in the local market has declined 2 cents, and is now 66 cents a gallon.

Linseed Oil.—The leading crushers have not reduced the spot price of linseed oil, but there is little spot business being done. October contracts are selling at $1.83 a gallon, and November contracts at $1.81. No contracts can be made for delivery after November except to actual consumers who have Government orders. The seed crop outlook is promising, both in this country and in the Argentine.

Petroleum and Its Products.—There was little of interest during the week in the market for crude petroleum. In refined circles there were no price changes, with the exception of shifts in the price of fuel oil in the Middle West. The feature of Government activities in the petroleum line was the appeal to refiners of crude to increase their output of kerosene. Gasoline conservation is still being pressed, and the Pacific Coast is now seeing a sharp stringency, since 250 carloads of gasoline a day have been sent East to offset scarcity here.

Drug Market.—Advances in codeine and soda benzoate, together with the decline in saccharin, featured the market. Other materials held steadily to their previously achieved positions. Among the crude drug group, buchu leaves, ergot and ipecac furnished the strongest factors, while the close of the market for botanicals in general showed no signs of even minor weakness.

Essential Oils.—Strength in French and Italian essences was marked throughout tha period. Domestic oils were also in firm position, but proved slightly of less interest in the development of the week's activities.

Seeds and Spices.—Canary seed was the feature of the week, and with the laying down of the recent embargo, it was but natural that the sharp advance would eventuate. Hemp seed was second only to the development in canary. Celery was lower at the close, as also were cardamon, caraway, dill and Russian poppy. Spices held generally firm and unchanged at the close.

Waxes.—Trading was along routine lines, and confined for the most part to actual requirements. Stocks are in fair shape at the moment, and there is little likelihood of material change for the next week. Of the entire group, the strongest element is Japan wax, which is in low supply and firmly held throughout the spot. However, all other members of the list are firm, if somewhat quiet.

Shellac.—Importers and consumers alike are awaiting the ratification of recently agreed upon plans for the importation, allocation and consumption of the material. In the main, present practices will be adhered to, but Washington has made some minor changes in the plans which will, if anything, allow the trade somewhat greater latitude.

Coal Tar Dyes and Intermediates.—Consuming demand for the finer grades of intermediates continues unabatedly good in this market, and there are only inadequate supplies to meet it. Producers are finding it unceasingly difficult to keep abreast of the requirements of both domestic and foreign buyers. Prices are firm all around, and in a few instances at new high levels, because of the strength of the demand.

Dye Bases and Dyewoods.—There has been no change in the market for dye bases and dyewoods from the position of firmness based upon shortage of adequate supplies in the major portion of the list of natural dyestuffs. Prices for the same are therefore being upheld at their previous levels without difficulty, and in some instances are still nominal, as stated from time to time in the past. No prospects for improvement in the matter of stocks is held for the immediate future by importers.

Fertilizer Materials.—The fact that manufacturers of commercial fertilizers cannot get labor enough to run their plants to capacity is interfering to some extent with the market for fertilizer materials. The shortage of ammoniates makes packing house fertilizers strong. There has been no strike as yet in the phosphate rock fields, but the men are not satisfied with the advance in pay that has been granted them, and the situation is still unsettled.

Chemical Market.—Steadiness characterizes the undertone of the chemical market, and there is little of important change to the situation as a whole. The so-called market leaders, bleaching powder, caustic soda and soda ash, are once more showing their leadership qualities by attracting the greater interest in the general trading on an improvement in demand for the last two named in particular. The third one has been scarce and in large demand for several weeks, and is one of the firmest features of the general market. Prices are well maintained throughout the list as a whole, and the position of the general market is very satisfactory to all concerned.

OBITUARIES.

W. W. BAKER.

William Whiteley Baker, vice-president of the American Agricultural Chemical Company, who resided at Tanglewood, an estate at Catonsville, a suburb of Baltimore, died September 22 at Saranac Lake, N. Y. He had been in ill health for about a year and went to Saranac Lake last June on the advice of his physician. His wife, his son, William Whiteley Baker, Jr., of Camp Holabird, Baltimore, and his daughter, Miss Elizabeth W. Baker, were with him at the time.

Mr. Baker was born in Baltimore in October 27, 1867, and was a son of the late Charles E. and Mary Elizabeth Baker. He received his early education in the public schools, and later attended a private institution at Ellicott City, Md. He married Miss Elizabeth Whiteley, of Delaware, who was his second cousin. Besides the members of the family mentioned he is survived by one brother, Benjamin Whiteley Baker, of Raleigh, N. C., and six sisters.

The fertilizer trade of Baltimore, at a special meeting attested its high appreciation of the sterling worth of the deceased by adopting resolutions of regret and of condolence with the family. This special meeting was presided over by A. T. Dukes, of the F. S. Royster Guano Company, and the resolutions were framed by a committee made up of Mr. Dukes and S. B. Haskell, the latter business manager of the Soil Improvement Committee.

Mr. Dukes, together with T. A. Dexter, of the Armour Fertilizer Works; E. L. Winder, of the G. Ober & Sons Company, and Spencer Carter, of the Rasin-Monumental Company, were named to represent the fertilizer trade at the funeral, which was largely attended by men prominent in the affairs of Baltimore.

CAPTAIN P. S. MORRIS.

In the passing away Tuesday morning of Captain Pendleton S. Morris, vice-president of the Standard Oil Company of Louisiana. New Orleans lost one of its most prominent and patriotic citizens. Captain Morris had lived in several Southern States. While residing at Brunswick, Ga., he married Miss Lily Littlefield, of that city. She survives him, with three of their sons and one daughter. The sons are Major Pendleton S. Morris, who is thought to be with the American fighting forces in Russia; Lieutenant Stanley S. Morris, now in France, and Lieutenant Edgar T. Morris, who is now at a port of embarkation. The daughter is Mrs. Carey J. Ellis, of Rayville, whose husband now is attending the officers' training camp at Camp Humphries, Va.

In 1897 Captain Morris came to New Orleans, rapidly rising in the oil business and becoming vice-president of the Standard Oil Company of Louisiana in 1909, which position he held until his death.

Members of the Association of Commerce, the Pickwick Club, the Kentucky Society and other organizations with which Captain Morris was affiliated attended his funeral in a body.

Captain Morris was an active member of the Board of Trade, and had been president of the Association of Commerce.

Respecting the memory of Captain Morris, who served as vice-chairman of the New Orleans Chapter, American Red Cross, the main headquarters and all branches and auxiliaries in the chapter's jurisdiction closed Wednesday afternoon at 2:30 o'clock.

CHARLES H. BAYER.

Charles H. Bayer, president of the Bayer-Stroud Corporation, of 60 West Forty-fourth street; president of the Basic Products Company, of 233 Broadway, makers of aspirin, and vice-president of the Sawtay Products Corporation, manufacturers of cooking fats, was killed late Saturday night in an automobile collision. He was returning to his home in Great Neck from New York and his car was struck by another near the junction of the North Hempstead Turnpike and the Lakeville road. His wife, Mrs. Jessie Gaggin Bayer, was instantly killed at the same time. He was 42 years of age, while his wife was his junior. A 13-year-old son survives.

I. GILES LEWIS.

I. Giles Lewis, secretary of the wholesale drug firm of Robert Stevenson & Co., of Chicago, died at his home in Chicago on September 19, at the age of 71 years. He was born in Pharsalia, N. Y., and after graduation from Ann Arbor University, became identified with the drug trade in the wholesale end. For 37 years he was the manager of the sundries department, as well as the secretary of the Robert Stevenson & Co. The burial was at Ann Arbor, Mich.

Theodore Wallace Todd, 1st sergeant, Company L, 107th Infantry, and son-in-law of Edwin H. Burr, of Roure-Bertrand Fils, of New York and Grasse, France, is reported killed in action in France, about August 20, although no direct word from the War Department has been received. In a counterattack during trench fighting Sergeant Todd was killed in No Man's Land, his body being recovered later. Mr. Burr has the sympathy of his associates in this loss. Sergeant Todd was a real friend and a courageous American who was not afraid to make the supreme sacrific should it prove his lot.

James Mackie Donald, chairman of the board of the Hanover National Bank, died last week at his country home near Trenton, N. J. Mr. Donald began commercial life as a boy with Harrison Brothers & Co., dealers in chemicals and paints, in 1872. Eight months later he was made a shipping clerk. In 1873 he obtained a clerkship in the Hanover National Bank, and since that time his career has been in financial and banking circles.

Lieut. Martin F. Bowles, son of Ross Bowles, general manager of the East St. Louis, Ill., plant of the American Zinc Company, was killed while leading a reconnoitering party in No Man's Land on the French front September 3, according to a letter just received by his parents from the Brigadier General on whose staff Lieutenant Bowles served. Lieutenant Bowles was 25 years old, and a graduate of the Rolla School of Mines, University of Missouri.

Dividends Declared.

Swan & Finch have declared a dividend of $2.50 a share, payable November 1 to stock of record October 1.

The Eureka Pipeline Company has declared a dividend of $5 a share on the capital stock, payable November 1 to holders of record October 15.

The Pennsylvania Salt Manufacturing Company has declared a quarterly dividend of 2½ per cent., payable October 15 to stock of record September 30.

The Prairie Oil and Gas Company has declared a dividend of $3 a share quarterly, and an extra dividend of $2 a share, payable October 1 to stock of record September 30.

SULPHURIC ACID PRICES ARE SET

In Readjustment for Next Three Months Former Price Is Cut.

Washington, Sept. 28, 1918.

The price fixing committee of the War Industries Board has announced that, subject to the President's approval, the following maximum prices were agreed upon at a meeting between the manufacturers of sulphuric and nitric acid and the price fixing committee, held on September 26, these prices taking effect September 30 and expiring December 30:—

Sulphuric acid, 60 degrees Baume, $16 per ton of 2,000 pounds.

Sulphuric acid, 66 degrees Baume, $25 per ton of 2,000 pounds.

Sulphuric acid, 20 degrees oleum, $28 per ton of 2,000 pounds.

F. o. b. at manufacturers' works in sellers' tank cars.

All strengths less than 66 degrees Baume shall be calculated from the price for 60 degrees Baume.

All strengths above 66 degrees Baume (93.2 per cent. H_2SO_4) shall be calculated from the price for 66 degrees Baume.

In carboys, in carload lots, one-half cent per pound extra.

In carboys, in less than carload lots, three-fourths cent per pound extra.

In drums, and quantity, one-fourth cent per pound extra.

Nitric acid, 42 degrees Baume, 8½ cents per pound, f. o. b. manufacturers' works in carboys.

In carboys in less than carload lots, one-fourth cent per pound extra.

There shall be no additional mixing charge for mixed acids, same being figured on the acidity content.

Bombay Government Making Magnesium Chloride and Bromine.

The government of Bombay is undertaking the exploitation of the bitterns from salt manufacture in the Runn of Cutch for the manufacture of magnesium chloride and bromine.

WHALING NOW TO FILL THE LARDER

War Restrictions Turn the Catchers of Cetaceans Into Meat Hunters.

Washington, Sept. 28, 1918.

A revival of the whaling industry on new lines is observed by the fishery experts in Washington, but the new developments make the production of oil a secondary matter. Whale and porpoise oil are still sought, but the whale and porpoise meat are now attracting greater attention.

The subject is presented in reports which have been received by the United States Bureau of Fisheries. This government bureau has noticed that whale meat holds an important place in the dietary of Japan, and that other nations have recognized its merits; but its records show that it was not until last year that any American whaling company undertook to market the flesh for food on a large scale.

The restrictions of the war caused increased attention to be given to sources of food, and in 1917 a whaling company on the Pacific coast of the United States completed a 25-ton cold storage plant for the preservation of the meat, with a freezer having a capacity to care for 50 tons. The plant was finished in August.

Although the company began marketing this product in mid-season without adequate preparation, more than 80 tons of the fresh meat were sold during the balance of the season in American markets, principally on the west coast.

Arrangements have since been perfected for marketing 500 to 600 tons during the present season, and a British Columbia plant has made preparations to pack about 50,000 cases of the canned meat.

On the Maine coast interest has been shown recently in the renewal of the fishery for whales which may be taken along the coast, and several companies have been interested, with the result that a number of catches of whales have been reported. On the Gulf coast, also, particularly along the Texas shore, they are fishing for porpoises.

Dr. Radcliffe, of the scientific staff of the Bureau of Fisheries, calls attention to the fact that whales and porpoises are mammals, and that their flesh, therefore, is meat, and not fish. "The meat of the whale," he says, "resembles beef in texture and appearance. By some it is compared to venison in taste. Nevertheless, they have a distinct flavor of their own. A sample of canned whale meat analyzed by this bureau contained more than 30 per cent. protein, 6½ per cent. fat and 1.8 per cent. ash. Of whales, the humpback is probably the best for food, although the sei and finback yield excellent meat. The humpback yields as high as six tons of edible meat, the sei five tons and the finback eight tons.

"Porpoises and dolphins are small whales, and their meat also is excellent for food. In fact, by some it is preferred to that of the larger whales.

"Because of its value for illuminating purposes and for lubricating, for many years sperm oil was considered the most important and most valued of whale products. With the substitution of petroleum products and the new methods of producing and refining various vegetable oils, the economic value of whale oil decreased and whalebone became the most important product of the fishery. Whales also yield many other valuable products, such as ambergris, whale amber, bone meal, tallow and glue. The employment of the meat for food, including the use of the hardened fat, now gives promise of becoming the most important purpose of the industry."

CHEMICAL PROBLEMS.

Will Be Considered at London Conferences of Allied Representatives.

Washington, Sept. 28, 1918.

Chemical problems and numerous other scientific subjects of industrial importance are to be considered at the London conference of representatives of the Allied countries in these lines to which the National Academy of Sciences,, which has its headquarters in Washington, has appointed delegates. The meetings are to begin October 9. One of the American delegates is Dr. A. A. Noyes, of the chemical faculty of the Massachusetts Institute of Technology. The others are Dr. George E. Hale, of the Mount Wilson Solar Observatory, who is chairman of the National Research Council in this city; Dr. Simon Flexner, pathologist, of the Rockefeller Institute for Medical Research; Dr. N. A. Bumstead, professor of physics at Yale, and now scientific attache at the American Embassy in London; Dr. W. F. Durand, professor of mechanical engineering at Leland Stanford University and scientific attache at the American Embassy in Paris, and Colonel J. J. Carty, chief engineer of the American Telephone and Telegraph Company.

These men are to confer with representatives of the acamedies of Paris, London, Rome and Tokio. Scientific cooperation among all the Allied nations is the object of their deliberations.

SPICES IN DEMAND.

Canada Offers Ready Market With Almost Unlimited Sales.

Washington, Sept. 28, 1918.

United States dealers in spices who have surplus stocks can find a ready market for almost unlimited supplies in Canada, which is suffering through the lack of bottoms in which to bring in the customary shipments from Spain.

In Canada spice prices have risen sharply during the past year, and importers find it difficult to obtain supplies in sufficient quantities to take care of the demand. Peppers, which a year ago sold at 35 to 38 cents for black and 38 to 45 cents for white, are now 44 to 46 cents and 50 to 55 cents a pound, respectively. Cloves are reported rather scarce and in moderate demand; prices which last year ranged from 40 to 55 cents are now 75 to 85 cents a pound. Allspice is in active demand in a rising market.

It is stated that stocks of nutmegs in first hands are small and poorly assorted; prices during the year have advanced about 5 cents a pound. Gingers show little change, though Jamaicas are higher, owing to brisk export demand, which has depleted spot stocks; prices ranged from 25 to 35 cents a year ago and are now 30 to 40 cents. Paprika is higher in price, due to existing conditions of transportation, the bulk of supplies coming from Spain, with few bottoms available.

Many grades of seeds and herbs are quite active. Importers are finding that, because of high prices abroad, they are able to use spot stocks to advantage to fill urgent orders. Spot supply, as a consequence, has been depleted, and celery seed, caraway and thyme are considerably higher. Mustard seed, which brought 25 to 30 cents a pound last year, is 38 to 45 cents to-day.

REGIONAL ADVISERS

Of Paint and Allied Industries Organize for Industrial Development.

Washington, Sept. 28, 1918.

A preliminary meeting of regional advisers of the paint, varnish and allied industries was held in Washington September 19, at which time an organization was effected and a program of activities discussed. The plan of operation decided upon was as follows:—

Each section will be organized by calling meetings of manufacturers of varnish and paint and similar materials, at which local committees of not to exceed five members shall be appointed to represent the district.

These manufacturers are to be supplied with government specifications for paints, etc., and will be instructed in their interpretation. Formulas to comply with the specifications can be obtained from the secretary's office. In regard to costs the War Service Committee of the paint industry has called attention repeatedly to the desirability of manufacturers figuring their costs on replacement values.

Manufacturers will be instructed to furnish affidavits when supplying paints to the government that such paint complies with the specifications.

The whole work of these regional advisers is a part of system of regional development of industry to meet the demands of the War Industries Board through the development of new industrial resources.

PAINT, VARNISH, CHEMICAL AND DYE MEN URGE ACTION AT ONCE TO PUT FOURTH LIBERTY LOAN OVER THE TOP

"It Is Vital and Essential to Subscribe at Once," Urges Chairman Gates of Paint Committee—"There Can Be No Going Back."

The members of the Paint Liberty Loan Committee are urgently requested to attend a meeting on Wednesday, October 2, at the Drug and Chemical Club, 100 William street.

Subscriptions to the amount of $1,035.600 have been reported to the secretary, and we are anxious to report on Saturday, October 5, to the general committee as large a subscription as possible from our trades.

Please come prepared, therefore, to report on as many of the concerns, who have been assigned to you, as possible.

Advertising matter will be ready for distribution at this meeting, and we expect a 100 per cent attendance, especially those who were not at the first meeting.

H. GATES,
Chairman.

Governor Benjamin Strong of the Federal Reserve Bank announces that the Treasury Department just made an explicit expression of its views to the effect that interstate corporations having deposits in more than one city should file their subscriptions either with their principal banking institution or with the Federal Reserve Bank of the district in which their principal banking connection is located, in either case with a memorandum as to the institutions in the various cities to which credit for the subscriptions should be given, this credit to be ratable to the deposits ordinarily maintained by such corporations with their depositary institutions.

This has been followed by a telegram from Assistant Secretary Leffingwell as follow:

"Referring to my letter of September 11, relative to allocation of subscriptions of interstate corporations, please instruct all Liberty loan committees in your district that they are to observe the spirit of this letter absolutely and refrain from soliciting subscriptions from interstate corporations, except in accordance with the principles therein set forth."

Governor Strong has written a letter with respect to subscribers' buttons which has been sent out broadly throughout this organization, and

"In order to make adequate provision so that the supply of buttons will be sufficient to reach all those who are entitled to them, it has been found necessary to adopt a regulation which will make certain that buttons are given only to bonafide subscribers.

"It has therefore been decided that no subscriber shall be entitled to receive the official button issued by the Treasury Department until the initial payment has been made, either to a duly authorized canvasser or to a banking institution.

"All district chairmen are requested to see that this ruling is sent to all chairmen in their respective districts, with the request that all members of the organization should govern themselves by the spirit of the foregoing ruling."

CHAIRMAN GRAY'S APPEAL

At this critical moment the Sacred Duty of each one of us at home is to assist in raising the money required by the government to finance our vastly increased operations on the battlefield.

This committee was formed for the purpose of obtaining and reporting subscriptions to the FOURTH LIBERTY LOAN from every corporation, firm and individual connected with the trades it represents.

In order that the total subscriptions reported by this committee may indicate accurately the response made by the Chemicals, Drugs, Druggists' Sundries and Allied Trades, it is earnestly requested that you will fill out and return the enclosed card as soon as your subscription has been filed with your bank.

WILLIAM S. GRAY,
Chairman Chemicals, Drugs and Allied Trades.

CHAIRMAN GATES' APPEAL

The Paint and Varnish Committee during the Fourth Liberty Loan Campaign must report 60 per cent. more subscriptions than we did in the third drive, or the sum of NINE AND ONE-FOURTH MILLION DOLLARS.

That is our lowest mark, and the trades must assist the committee to the utmost in meeting this tremendous task. Think of the effect on our boys and our Allies—not to speak of the Germans—if we are able to cable that the sum is almost reached the first week. It is essential, yes, vital that every member of the paint and allied industries *subscribe at once* and *to the limit.* The effect will be wonderful.

H. GATES.
Chairman of the Paint, Oil, Varnish and Allied Trades.

Chemical, Drugs, Druggists' Sundries and Allied Trades.

The Liberty Loan Committee of these trades is made up as follows:—

William S. Grey, chairman, 80 Maiden Lane, New York.

C. S. Lutkins, vice-chairman, General Chemical Company, 25 Broad street, New York.

John Anderson, vice-chairman, Chas. Pfizer & Co., 81 Maiden Lane, New York.

James J. Crawford, secretary, William S. Gray & Co., 80 Maiden Lane.

"It Is the Sacred Duty of Each One at Home to Raise Money to Finance Our Increased War Operations," Says Chairman Gray of the Chemical Committee.

G. H. O'Connor, secretary, William S. Gray & Co., 80 Maiden Lane.
William T. Miller, National Aniline and Chemical Company, 21 Burling Slip, New York.
Frederick W. White, Peters, White& Co., 51 John street, New York.
Eugene M. Taylor, Edward Hill's Son & Co., 64 Wall street, New York.
Edward Plaut, Lehn & Fink, 120 William street, New York.
Charles A. Loring, Powers-Weightman-Rosengarten Company, 145 Front street, New York.
Herman A. Metz, H. A. Metz & Co., 122 Hudson street, New York.
Alexander Joseph, Pfeiffer Color Company, 100 William street, New York.
Harry C. Lovis, Seabury & Johnson, 59 Maiden Lane, New York.
Harry J. Schnell, Oil, Paint and Drug Reporter, 100 William street, New York.
Walter Alexander, National Gum and Mica Company, 11th avenue and 50th street, New York.
H. D. Ruhm, Marden, Orth & Hastings Corporation, 61 Broadway, New York.
Dr. Hugo Schaefer, College of Pharmacy, 115 West 68th street, New York.
F. Morse Smith, H. J. Baker & Co., 81 Fulton street, New York.
Willis L. Garey, Royal Baking Powder Company, 135 William street, New York.
Romaine Pierson, The Practical Druggist, 81 Fulton street, New York.
Clement C. Speiden, Innis, Speiden & Co., 46 Cliff street, New York.
George Merck, Merck & Co., 45 Park Place, New York.
H. S. Farleigh, Hooker Electrochemical Company, 40 Wall street, New York.
H. H. Good, Carter Medicine Company, 45 Murray street, New York.
Henry M. Toch, Durex Chemical Company, 320 5th avenue, New York.
Ernest C. Klipstein, A. Klipstein & Co., 644 Greenwich street, New York.
Edward V. Killeen, George Lueders & Co., 218 Pearl street, New York.
Russell R. Sloane, Dodge & Olcott, 87 Fulton street, New York.
Milton A. Maas, Maas & Waldstein Company, 92 William street, New York.
E. J. Steer, the Barrett Company, 17 Battery Place, New York.
W. R. Kirkland, Fairchild Bros. & Foster, 76 Laight street, New York.
Horatio N. Fraser, Fraser Tablet Company, 453 19th street, Brooklyn.
Charles L. Huisking, Charles L. Huisking, Inc., 5 Platt street, New York.
J. Edward Young, Jr., Thurston & Bradich, 27 Cliff street, New York.

Sub-Committees.

The field covered by this committee has been divided among the chairmen of sub-committees as follows:—

Mr. Lutkins:—Heavy chemicals, oxygen.
Mr. Anderson:—Manufacturing chemists.
Mr. Miller:—Dyes, colors and lampblack.
Mr. Taylor:—Alkalies.
Mr. Plaut:—Wholesale druggists, retail druggists, druggists' sundries, dental laboratories, surgival appliances, surgical instruments, chemical laboratories and medical laboratories.
Mr. Steer:—Coal-tar products.
Mr. Schnell:—Publicity.
Mr. Smith:—Agricultural chemicals.
Mr. Good:—Proprietary medicines, homeopathic medicines.
Mr. Killeen:—Essential oils.
Mr. Kirkland:—Physicians' supplies, sponges, dental supplies.
Mr. Huisking:—Artificial limbs, boiler compounds, carbonic acid gas, disinfectants, drug brokers and importers, sweeping powder manufacturers, vermin exterminators.
Mr. Alexander:—Gum importers.

War Industries Board to Announce License Regulations for Platinum and Irridium.

Washington, Sept. 28, 1918.

Regulations have been drafted and will be promulgated early next week by the War Industries Board, covering the issuance of licenses for trading in platinum, irridium and other essential war metals, of which there is a limited supply. The War Industries Board has been working on this system of regulations for several months in co-operation with the Bureau of Mines, United States Department of the Interior, and other war work establishments.

Prohibition After July 1 for Period of War Voted by the House.

Washington, Sept. 28, 1918.

Nationwide prohibition after July 1, for the period of the war, was voted by the House, 171 to 34, following the Senate example. The Senate put this measure as a rider on the emergency agricultural appropriation bill for food stimulation. It is now in conference on other amendments. After voting in the committee of the whole to accept an amendment permitting the importation of wine until May 1, the House in its final vote reversed its decision by a vote of 121 to 59, retaining the original Senate provision that the importation of wine must cease when the measure becomes effective upon signature by the President. The amendment was approved by the House Committee on Agriculture to meet objection by the governments of France, Italy, Spain and Portugal.

Cottonseed Oil Conference.

Washington, Sept. 28, 1918.

Cottonseed oil interests have been well represented in Washington during the past week at conferences which have been held by men from several of the interested States with the Food Administration. Among the States whose oil interests were involved in the discussions that took place are Oklahoma, Arkansas, South Carolina, Tennessee, Georgia and Mississippi. Among the subjects that received attention was that of the control of the business in certain respects during the present season.

The Oklahoma delegation consisted of R. A. Vose, of Oklahoma City; R. K. Wootten, of Chickasha, and W. F. Pendleton, of Durant, a committee from the crushers of that State who were interested in the adjustment of certain matters relating to the trade's control which had been left undetermined. They were accompanied by Judge Ames, who is the Federal Food Administrator for Oklahoma.

Similar business engaged the attention of A. G. Kahn and P. F. Cleaver, of Little Rock, and T. M. Gregory, of Pine Bluff, who represented Arkansas oil men. Others who were in conference with the Food Administration were W. D. West, of Columbia, S. C., secretary of the crushers' association of that State; John Stevens, of Kershaw, S. C., representative of the oil mill men; W. N. Riddell, president of the Osage Cotton Oil Company, of Chattanooga, Tenn.; H. L. Benton, of Monticello, Ga.; G. W. Agee, a leading chemist of Memphis, and M. C. Forrester, of Meridian, Miss.

PAINT AND VARNISH INDUSTRIES PROVED ESSENTIAL—IN 90 PER CENT. OF WAR WORK

Detailed Brief of War Conference Committee to War Industries Board Seeking Ruling Establishing Priority Rights an Amazing Presentation of War-Work Participation.

The War Conference Committee of the Paint and Varnish Industry has presented its detailed brief to Russell S. Hubbard, chief of the Paint and Pigment Section, of the War Industries Board, appealing for recognition as an essential industry. This brief is now under advisement in the hands of the committee, although since Mr. Hubbard is seriously ill the consideration is under the direction of Acting Chief Louis R. Atwood of Louisville. The brief, which is an eloquent and logical plea for essential recognition—as well as an amazing statement of the war-work activities of the two industries—is as follows:—

WAR CONFERENCE COMMITTEE OF THE PAINT AND VARNISH INDUSTRY.

Washington, Sept. 18, 1918.

Mr. R. S. Hubbard,
Chief, Paint and Pigment Section,
War Industries Board,
Washington, D. C.

Dear Sir:—In accordance with your suggestion made to the joint meeting of the War Service Committees representing various parts of the paint and varnish industry, a War Conference Committee, representing all the branches of the producing industry, has been formed, which committee met in New York on September 12, 1918. This meeting was attended by the following:—

For the Paint Industry:—E. T. Trigg, of John Lucas & Co., Philadelphia; W. H. Phillips, alternate, of Devoe & Raynolds Company, 101 Fulton street, New York.

For the Varnish Industry:—Arthur Davis, of Standard Varnish Works, 90 West street, New York; James B. Lord, alternate, of Boston Varnish Co., Boston, Mass.

For the Lead Pigments Industry:—Norris B. Gregg, of National Lead Company, 111 Broadway, New York; R. W. Evans, of Eagle-Picher Lead Company, 208 South La Salle street, Chicago, Ill.

For the Chemical Color Industry:—Arthur S. Somers, 100 William street; Louis H. Ansbacher, alternate, of A. B. Ansbacher & Co., 547 Fifth avenue, New York.

For the Dry Paint and Pigment Industry:—C. K. Williams, of C. K. Williams & Co., Easton, Pa.; Henry C. Stewart, alternate, of Westmoreland Chemical and Color Company, 925 Chestnut street, Philadelphia, Pa.

For the Zinc Oxide Industry:—E. V. Peters, of the New Jersey Zinc Company, 55 Wall street, New York; A. W. Dodd, alternate, of American Zinc and Smelting Company, 120 Broadway, New York.

For the Lithopone Industry:—C. L. Krebs, of Krebs Pigment and Chemical Company, Newport, Del.; S. B. Woodbridge, alternate, of E. I. du Pont de Nemours & Co., 21 East Fortieth street, New York.

For the Gum Importers:—Samuel H. Gillespie, of L. C. Gillespie & Son, 8 Fletcher street, New York; George C. Knapp, alternate, of Paterson, Boardman & Knapp, 10 Bridge street, New York.

For the Shellac Industry:—Rudolph Zinsser, of Wm. Zinsser & Co., 195 William street, New York; F. W. Kasebier.

For the Turpentine Industry:—C. W. Dill, of Columbia Naval Stores Company, 17 Battery place, New York; W. H. Crawford, alternate, of Isaac Winkler & Bro., Cincinnati, Ohio.

Secretary:—G. B. Heckel, secretary Paint Manufacturers' Association of the United States, National Varnish Manufacturers' Association, etc.

Why Recognition Is Asked.

This committee, speaking for the industry as a whole, appreciates the fact that the biggest business before every manufacturer today is to do his part to help win the war. The paint and varnish industry stands ready to make any sacrifice necessary to that end. The facilities, the men, and the materials of this industry are available to be used in whatever manner may be considered the most essential in supporting the government's war program. We not only desire to have it clearly understood that our physical resources are at the government's disposal, but, as an industry, we should be glad to lend the benefit of our practical knowledge and experience to the end that our resources may be made most quickly and efficiently available in speeding up the production of all of the many materials required in the nation's military operations. We know you realize the advantage which will accrue to the government from the practical co-operation of men in the industry, who have had years of experience and who are equipped by this experience to assist in this work. We recognize the tremendous responsibility which rests upon yourself and your associates in directing the operations which come under your official control, and we recognize, too, the great amount of detail and the diversity of activity involved. Because of this, our committee feels that you would perhaps welcome an official and concise statement from it, setting forth the importance of paint and varnish production to the war program, present and prospective.

Affects 90 Per Cent. of War Work.

It is estimated that not less than 90 per cent. of all war production, from ships to cartridges, requires in some stage of its preparation paint and or varnish in some form. Because of therapidly expanding program, it is difficult for us to prepare and present to you a detailed list of all of the various equipment of all kinds made and produced for war purposes, with the paint and varnish materials used thereon. We have, however, prepared, and attach hereto, a memorandum of some of the strictly war requirements in the paint and varnish field and being used today by certain of the major governmental departments. This list is not complete, in that it does not show all of the paint and varnish products used by the departments indicated and does not go into the requirements of some other departments, dealing only with the larger fields, neither does it show a complete list of paint and varnish materials needed by those having contracts for making war materials for the government.

The essentiality of paint and varnish to strictly war production is so evident that we do not feel it is necessary to present arguments to you with respect thereto. We desire rather to call your attention to the fact that practically all of the various products being used on government production, as shown by the attached memorandum, represent combinations of materials requiring in some instances—notably the production of varnishes and chemical dry colors—a considerable time in the process of manufacture.

Necessity for Materials.

We also call your attention to the fact that the paint and varnish requirements of shipbuilders, aircraft factories, munition plants, car builders, etc., are not always sufficiently known to enable them to place orders far enough in advance to enable the paint or varnish manufacturer to produce the finished product within the necessary time limit. Consequently, it is of the utmost importance that paint and varnish manufacturers should be supplied with the necessary materials in advance of the known ultimate consumption, in order that they may be in a position to furnish materials promptly for all of the many government uses. It is extremely difficult to ascertain with a sufficient degree of correctness just what percentage of materals being produced by the industry as a whole is going into direct or indirect war uses, and the percentage which finds its way into other uses. It is difficult for the reason that the paint and varnish manufacturer cannot always obtain this information from his customer and, in fact, many times the customer himself does not know the ultimate use to which the material will be placed.

When all of the various governmental activities are taken into consideration including, in addition to the known war material production, such activities as shipbuilding, marine requirements, auto trucks, government housing, hospitals, factories for war supplies, tractors, electrical equipment, railway requirements, structural steel, fiber trunks and containers, metal products, engines and boilers, motors, agricultural implements, hardware, sewing machines, typewriters and adding machines, telephone equipment, machinery, munition factories, housing for farm materials and help, canning factories, printing inks (for Liberty Bonds, government documents, posters, etc.)—it is apparent that the use of paint and varnish extends into practically every industry and every community throughout the entire country in its direct or indirect relation to the war.

In brief, we are sure you will agree with the statement that there is no industrial or contruction activity—whether it be directly for the government or in the interest of the public welfare, which the government permits to go forward—which does not in some manner require for the purpose of preserving from injury or decay the products of this industry, which products are as important in such structures as steel, lumber and hardware.

We are aware of the importance of man power in the present emergency, recognizing the fact that the production of supplies required for military operations is very largely, if not almost entirely, limited by the supply of available labor. And we are in hearty accord with all these measures which have been taken or which, in the judgment of the government, may become necessary to divert productive labor to those things immediately essential. Already the volume of material produced in the industry for consumption in civilian channels has been materially curtailed because of high prices, decreased building operations, and shortage of labor with which to apply the material, and with the promulgation of the order recently issued by the Priorities Division, prohibiting any new construction for civilian purposes without a license, and the requirement of a license for all repair work exceeding in value $2,500, the consumptiton will be curtailed to a much greater extent. It is our opinion that such use of paint and varnish for purely decorative purposes, as may have existed previously, has been entirely abandoned, and that the only consumption, under present conditions at least, for civilian purposes, will occur where it is absolutely necessary as a matter of preservation of property from imminent destruction.

Suggestions to the War Board.

The committee desires to suggest for your consideration:—

(a) That paint and varnish manufacturers be requested or instructed by your section to discontinue the solicitation of business from all civilian sources, including jobbers and dealers, by salesmen until at least January 1, 1919.

(b) That paint and varnish manufacturers be requested or instructed by your section to refrain from accepting between now and January 1, 1919, any orders from such sources for shipment after January 1, 1919.

(c) That paint and varnish manufacturers be instructed or requested by your section to refrain from the practice customary, with some plants at least, of putting up stocks of materials in anticipation of spring business, until after January 1, 1919.

The purpose of these suggestions is to reduce the amount of paint and varnish materials produced for civilian purposes, to that which is tconsidered by the user from his own promptings as necessary:—To remove the dangers, because of the uncertain market conditions, through abstaining from taking the usual spring orders from jobbers and dealers, prior to January 1, 1919, and to conserve capital, raw materials, fuel and man power, by retraining from the practice of anticipating spring requirements.

In making these suggestions, it is not the thought of the committee that any manufacturer should be restricted from his usual selling activities by means of salesmen with industries producing direct or indirect government requirements. It is believed that the salesmen calling on this type of trade are usually more experienced and practical men, whose services will be of material benefit to such industries under existing circumstances. The elimination of personal solicitation of business will reduce the material required for such purposes to the minimum.

Detailed Discussion.

It will be possible, as you well know, to discuss this subject in much greater detail, and this our committee is prepared to do, or, should you prefer, the individual War Service Committees representing the several branches of the industry will be glad to meet with you for the purpose of discussing their individual activities. The object of this statement now is to present in general terms the situation as it appears to exist from the standpoint of the composite industry.

Believing fully in the essentiality of paint and varnish to the war program, and realizing as we do the constantly increasing proportion of the industry's output, which finds its way into direct and indirect government work, the industry is immediately concerned with its proper classification, in order that there may not be unnecessary interference with its labor supply and consequent interrupted operation. We, therefore, respectfully submit for your consideration and action:—

That paint and varnish production should be classified as essential, and the public so informed.

Respectfully,
For the War Conference Committee of the Paint and Varnish Industry.
Ernest T. Trigg,
Norris B. Gregg,
Arthur Davis,
G. B. Heckel, Secretary,
William H. Phillips, Chairman.

Memorandum of Some of the Strictly War Requirements in the Paint and Varnish Business.

ORDNANCE DEPARTMENT.

Finishes for Field Artillery.

Very quick drying olive drab paint.
Black stencil paste.
Brown enamel primer.
Olive drab enamel.
Shellac varnish.
Orange and white shellac gum.
Raw linseed oil.
Turpentine and rosin.
Mineral spirits.
Drier.
Putty.
First coat priming for woodwork.
Varnish products.
Reinforced red lead paint.
Pure red lead (dry and in oil).
White lead, basic carbonate.
White lead, basic sulphate.

Projectile Finishes.

White.
Light olive green.
Blue gray.
Warm gray.
Black.
Green.
Yellow.
Blue.
Vermilion.
Varnish products.
Lacquers.
Turpentine and rosin.
White lead, basic carbonate.
White lead, basic sulphate.
Reinforced red lead paint.
Pure red lead (dry and in oil).
Orange and white shellac gum.

Seacoast Section (Paints and Varnishes for Coast Artillery Equipment.)

Standard olive drab.
Special quick drying olive drab.
White paint and tints made on a white base.
Drab paint for guns, etc.
Olive green paint.
Bronze green paint for seacoast carriages.
Reinforced red lead paint.
Pure red lead (dry and in oil).
White lead, basic carbonate.
White lead, basic sulphate.
Black paint (quick drying)
Graphite paint.
Asphaltum paint.
Brown enamel primer.
White paint for targets, etc.
Metallic red paint.
Zinc white paint.
White enamel, quick drying.
Red paint.
Stencil black.
First coat for woodwork.
Transparent lacquer.
Putty.
Shellac varnish.
Orange and white shellac gum.
Raw linseed oil.
Turpentine and rosin.
Mineral spirits.
Drier.
Spar varnish.
Mixing varnish.
Other varnish products.
Ultramarine paint.
Stencil white.

Cleaning and Preserving Division.

Ready mixed paints.
Olive drab.
White enamel.
Black paint.
Asphaltum paint.
Vermilion.
Lampblack.
White lead in oil.
White lead, basic carbonate.
White lead, basic sulphate.
Reinforced red lead paint.
Pure red lead, dry and in oil.
Raw or refined linseed oil.
Turpentine and rosin.
Boiled linseed oil.
Paint drier.
Brown enamel primer.
Red lead paint.
Helmet paint.
Canteen paint.
Varnish products.
White and orange shellac gum.

Camouflage Division.

Special optically active paint.
Raw linseed oil.
Turpentine and rosin.
Mineral spirits.
Paint drier.
Solvent naphtha.
Alcohol.
Shellac varnish.
White and orange shellac gum.
Water glass.
Borax.
Granular sodium carbonate.
Hide glue.
Oil soluble stains.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead (dry and in oil).
Reinforced red lead paint.
Leaded zinc.
Barytes.
Whiting.
Indian red.
Venetian red.
Lampblack.
Ocher.
Umber.
Sienna.
Para red.
Prussian blue.
Ultramarine blue.
Limeproof green.
Liquid for heat-resisting paints.
Liquid for rapid-drying metal paint.
Medium chrome yellow.
Orange chrome yellow.
Lemon chrome yellow.
Chrome green.
Rosin-linseed oil-water liquid.
Oil emulsion.
Varnish products.
Turpentine and rosin.
White and orange shellac gum.

Motor Equipment Division.

Special quick drying olive drab paint.
Electrical varnishes.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Reinforced red lead paint.
Turpentine and rosin.
White and orange shellac gum.

GENERAL ENGINEER DEPOT

Metal protective paint.
Paint for knockdown houses
Raw linseed oil.
Boiled linseed oil.
Turpentine and rosin.
Volatile mineral spirits.
Drier.
Miscellaneous varnishes.
Asphaltum varnish.
Black enamel.
Black paint.
Blue paint.
Bright red oxide paint.
Bronze green paint.
Brown enamel primer.
Camouflage colors—
Yellow.
Green.
Cream.
Black.
Copper paint.
Dark red oxide paint.
Deck and floor paint.
Exterior cantonment paint (gray).
Exterior cantonment paint (green).
Fire retardant paint.
Interior cantonment paint.
Graphite paint.
Gray paint.
Gray paint, special quick drying.
Lampblack, in oil.
Leaded zinc.
Olive drab paint.
Olive drab paint, special quick drying.
Olive green paint.
Shellac varnish.
White and orange shellac gum.
Paint and varnish remover.
Projectile paints—
White.
Light olive green.
Blue gray.
Warm gray.
Blue.
Green.
Vermilion.
Yellow.
Black.
Putty.
Reinforced red lead paint.
Pure red lead (dry and in oil).
Seal brown paint.
Slate paint.
Stencil black.
Stencil white.
Vermilion paint, liquid.
Vermilion paint, paste.
Cantonment varnishes.
White enamel.
White lead, basic carbonate.
White lead, basic sulphate.
White paint and tints made on a white base.
White target paint.
Wood filler.
Zinc white paint.

SHIPPING BOARD.

Paints and Varnishes for Steel Ships.

White paint.
Low visibility gray color.
Boot topping paint, slate color.
Spar varnish.
Mixing varnish.
Boot topping varnish.
Damar varnish.
Anto-corrosive bottom paint.
Anti-corrosive bottom paint.
Bituminous solution, asphalt.
Bituminous enamel, asphalt.
Bituminous solution, coal tar.
Bituminous enamel, coal tar.
Hand Mixed red lead paint.
Reinforced red lead paint.
White lead, basic carbonate.
White lead, basic sulphate.
Turpentine and rosin.
White and orange shellac gum.

Paints for Wood Ships.

White paint.
Low visibility gray color.
Boot topping paint, slate color.
Copper paint.
Spar varnish.
Mixing varnish.
Boot topping varnish.
Damar varnish.
Pure red lead, dry and in oil.
Reinforced red lead.
White lead, basic carbonate.
White lead, basic sulphate.
Turpentine and rosin.

NAVY DEPARTMENT.

Bureau of Supplies and Accounts.

White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Reinforced red lead.
Turpentine and rosin.
White and orange shellac gum.
Rouge for polishing lenses and glassware.
Varnishes.

Bureau of Construction and Repair.

Leaded zinc.
Copper paint.
Reinforced red lead paint.
Pure red lead, dry and in oil.
White lead, basic carbonate.
White lead, basic sulphate.
Black paint.
Gray paint.
Low visibility paints.
Flat finish wall paint.
Quick drying primer for knockdown houses.
Spar varnish.
Mixing varnish.
Damar varnish.
White and orange shellac gum.
Turpentine and rosin.

DEPARTMENT OF AGRICULTURE.

Forest Service.

Ivory white and light French gray.
Light French gray for porch floors.
Seal brown.
Roof green.
Dark red bridge paint.
Varnish.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Reinforced red lead.
Turpentine and rosin.
White and orange shellac gum.

SIGNAL CORPS.

Construction Division.

Dark oak oil stain.
Raw linseed oil.
Turpentine and rosin.
Mineral spirits.
Benzol.
Japan drier.
Flat finish sanitary wall paint.
Varnish.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Reinformed red lead.
White and orange shellac gum.

Equipment Division.

Ready mixed paints.
Paints for hangars and housing buildings.
Olive drab.
Graphite paint.
Black paint.
Brown oxide paint.
Gray paint.
Shellac varnish.
White and orange shellac gums.
Airplane spar varnish.
Acetate dope.
Nitrate dope.
Brown enamel.
Olive drab dull-finish enamel.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Reinforced red lead.
Turpentine and rosin.

QUARTERMASTER CORPS.

Ready mixed paints.
Low visibility gray.
Olive drab army standard.
Flat finish interior wall paint.
White enamel.
Deck and floor paint.
Graphite paint.
Black marine paint.
Copper paint.
Battleship gray color.
Dark red oxide paint.
Black fire retardant paint.
Reinforced red lead paints.
Aluminum paint.
Paste wood filler.
Paint and varnish remover.
Mineral spirits.
Paint drier.
Varnish.
Raw linseed oil.
Turpentine and rosin.
Putty.
Containers.
White and orange shellac gum.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Reinforced red lead.

RAILROAD ADMINISTRATION.

Reinforced red lead semi-paste paint.
White lead, basic carbonate.
White lead, basic sulphate.
Pure red lead, dry and in oil.
Dark red oxide semi-paste paint.
Black semi-paste paint.
Stencil black paste paint.
Stencil white paste paint.
Semi-paste body color paint (refrigerator cars.)
Liquid surfacer.
Knifing surfacer.
Black enamel.
Gray cab enamel.
Front-end paint.
Raw linseed oil.
Spar varnish.
Mineral spirits.
Turpentine and rosin.
Drier.
Drop black in japan.
Wood preservative.
Outside coach finishing varnish.
Outside rubbing varnish.
Inside rubbing varnish.
Locomotive black varnish.
Locomotive clear varnish.
Mixing varnish.
White enamel.
White and orange shellac gums.

EXPORTS OF DYES SHOULD INCREASE

Government Experts Look for Bigger Shipments Since Fast Blue Perfection.

Washington, Sept. 28, 1918.

Government officials at Washington anticipate a still greater increase in the exports of dyestuffs from the United States as a result of the production of fast blues by the manufacturers in this country, in addition to their other colors. Determined efforts to make such fast colors have brought success, and this means much both to the domestic and to the foreign trade, with the promise it gives of replacing the former supply of German dyes. Among the other recent additions are a synthetic indigo and a fast turkey red, which is equal to the German article.

It has been noticed from the trade figures for the first half of the present year that the dyestuff exports of the United States are now greater in volume than the quantity of imports in the years that preceded the war. Figures that have been compiled for the use of the War Trade Board show that since the end of the fiscal year the volume of exports of dyestuffs from the country has continued to increase, so that at the present time the excess over the former imports is even greater than it was on the first of July.

Developments in manufacture and records of imports are regarded by officials here, especially those connected with the War Trade Board, as showing that the Germans will find after the war that their monopoly of dyestuff distribution has been broken. Both England and the United States are rapidly increasing their production, and with the moderate amounts that are contributed by Switzerland, a new and permanent trade is being built.

It is recognized by the manufacturers that German producers will in the future endeavor to restore their former hold on this trade, and will use every possible device to get back the markets that they have lost. It is predicted, however, that they will make little headway in the United States or England, and that the battle of international trade in this class of materials will be fought out in the countries which are now classed as neutral. The German weapons will be their highly developed manufacture and probably a dumping campaign. It is likely that strong efforts will be made by the manufacturers in the United States to meet them in both respects.

It is earnestly maintained that American dyes as now being made are as good as the German in every respect. Any claims to the contrary are set down by the government observers as finding their source in Teutonic propaganda. The exports to Mexico, Central and South America, Japan, China and Spain have given the very best satisfaction in those countries, and the chief concern of those who are now giving their attention is that other associated materials may be shipped along with the dyes that are sent abroad, in order to meet the demands of purchasers in foreign countries. Mordants, for instance, are needed, and when they can be shipped along with the dyestuffs the market is more easily retained. It is urged that if the United States is prepared to supply a variety of the chemicals needed in the dye industry it will make even greater gains in the exports of the colors.

NO SPECIAL AGENTS.

Chairman Baruch of War Industries Board Warns Producers of 1918 War Materials.

Washington, Sept. 28, 1918.

Warning to trade interests who can furnish materials needed in war work by the United States Government that they do not need to employ any special agents who claim to have influences with the War Industries Board or any government officials, was given on Wednesday by Bernard M. Baruch, chairman of the War Industries Board.

Mr. Baruch emphasized the desire of the board to get the view of every citizen as to business conditions and matters affecting the welfare of his special industry, but asserted that the employment by such citizens of attorneys or agents to present their cases was both unnecessary and undesired.

He called attention to the fact that some time ago the War Industries Board had issued a special bulletin on the subject, warning business men against employment of men as representatives who claim influence with members of the War Industries Board or divisions of the board. He denied that such influence existed to the extent of value to business men. In his statement today, Mr. Baruch said that with the War Industries Board every citizen is on an equal footing, and any cause that needs special pleading is liable to prejudice. The board wants to hear everybody on matters of importance, and Mr. Baruch stated he saw as many as he could.

An effort is being made by Mr. Baruch to decentralize the work of the board where possible, so that each individual citizen interested can get his hearing locally and not be forced to come to Washington. The local organization of the Resources and Conversion Section of the War Industries Board is being used in this connection.

Mr. Baruch said that there existed some confusion in the minds of business men as to the functions of the War Industries Board in the matter of contracts. He pointed out that the board did not originate any contracts, and that it simply cleared contracts originating elsewhere with the government by directing the flow of materials to fill those contracts.

Another point touched on by Mr. Baruch in his conference was in connection with some reports that certain Allies of the United States in the present war were profiteering at the expense of the United States through sales made to various agencies of this government. Mr. Baruch said he did not believe this to be true. Quoting figures obtained from the War Trade Board, he showed that the re-export business of Great Britain in 1918 had decreased 86 per cent. from the re-export business of 1913, and that there was a falling off of 70 per cent. in the direct export business of the United Kingdom between 1913 and 1918.

EXPORTS TO SWEDEN.

War Trade Board Regulations Supersede Last Month's Rulings.

Washington, Sept. 28, 1918.

Jute and hemp, cork and manufactures, raw phosphates, hair and feathers, cotton, tanning materials, rubber, lead, tin, margarine, wines and spirits, various kinds of oil, drugs and medicinal supplies, and numerous other articles which have figured in the export trade to Sweden, are affected by a new ruling which has been made by the War Trade Board, superseding a previous ruling on the subject of export licenses granted in accordance with an agreement which has been concluded with that country. Last month's announcement with respect to the issuance of licenses for exports to Sweden has been withdrawn, and new instructions involving import associations in the Scandinavian country have been substituted:—

Exporters should apply for licenses to the Bureau of Exports, Washington, D. C., using application Form X and such supplemental information sheets concerning the commodity as are required.

Exporters in the United States before filing applications for export licenses must obtain from the prospective importer in Sweden advice that there has been issued by an appropriate importing association, or by the Statens Handel's Kommission, a certificate covering the proposed consignment. The number of the certificate should be forwarded by the importer in Sweden to the American exporter. This number should be specified on Supplemental Information Sheet X-104, which must be duly executed and annexed to the application for an export license.

Commodities to be exported to Sweden may be shipped only on vessels flying the Swedish flag.

The War Trade Board further announces that no purchases for export to Sweden, or arrangements for the manufacture of any article for export to that country should be made before an export license has been secured.

The War Trade Board has been advised that the following import associations in Sweden will accept, on behalf of the Swedish importer actually interested, consignments of the articles mentioned below. Other import associations may be formed in the near future, in which case due announcement will be made:—Corkwood Import Association—Cork and manufactures thereof; manufactures of hides and leather, tanning material, chrome, alum, chrome sulphate, bichromate of sodium and potassium for tanning purposes, and similar commodities. Raw Phosphate Import Association—Raw phosphates. Margarine Manufacturers' Raw Material Import Association—Edible oil and fats for the manufacture of margarine. Chemical Industries Import Associations—Technical oils, camphor, paraffine wax, other waxes, varnishes fats and tallows for technical use, asbestos waste, dyes, wood pulp, paper, stone and clay (excluding mica and coal), phosphates, rosin, soda anodes, paints, antimony sulphide, sulphur and similar commodities. Oil Manufacturers' Import Association—Linseed, rape seed, beet seed, linseed oil, rapeseed oil. Swedish Medical Board—Drugs, medical and surgical supplies. Swedish Victualling Commission—Saltpeter, seeds (excluding rape seed, linseed, beet seed), oil cakes and similar commodities. Lubricating Oil Import Association—Lubricants, vaseline and similar commodities.

Water Power Bill Sent to Conference —Covers Leasing on Public Lands.

Washington, Sept. 28, 1918.

The water power bill, after several days of debate in the Senate, was finally sent to conference by a vote of 42 to 9 on Monday. Before the vote was taken, however, it was arranged that the conferees on the part of the Senate should be six in number, three members of the Commerce Committee and three members of the Public Lands Committee. The Senate Commerce Committee handled the water power bill when it was in the Senate, before the House passed its substitute bill, and the appointment of three members of the Public Lands Committee was a concession to the Senators from the public land States, who insisted that the Public Lands Committee should have jurisdiction in the matter because the bill, as passed by the House, provides for the leasing of water power sites on public lands.

The House struck out the entire Senate bill and drafted a measure of its own, following closely upon the recommendations of the Secretary of War, the Secretary of Agriculture and the Secretary of the Interior.

WILDCAT STOCK

Exchange for Liberty Bonds Scored by Capital Issues Committee.

Washington, Sept. 28, 1918.

The Capital Issues Committee has denounced as fraudulent a campaign to induce many foreign-born citizens to trade their Liberty bonds for wildcat stocks. The Capital Issues Committee accuses the promoters of advising their victims that big rewards can be had through investment in "wildcat" stocks, which can be invested in the fourth Liberty loan.

The campaign is being carried on principally among persons who were born in Austria-Hungary, who are asked to exchange their Liberty bonds for "wildcat" oil stocks.

The Capital Issues Committee has evidence showing that 20 per cent. of the investment is paid to salesmen and 40 per cent. to the promoters—so that not more than 40 per cent. of the value of the Liberty bonds actually goes into the investment in a questionable and highly speculative "wildcat" stock or promotion scheme.

CONTRACT CLAUSE STANDARDIZATION

All Future Contracts of War Department Will Look to Speedy Output.

Washington, Sept. 28, 1918.

Standardization of contract clauses which will be incorporated in all future contracts made by the various purchasing agencies of the War Department has been completed. The clauses are designed principally to speed up production, to guard against fraud, to protect the interests of labor and to guard and assure the interests of the government and the contractors, and thereby prevent legal complications.

The work of preparing the clauses has occupied the attention of a special committee of the general staff for months. During this time all the various forms of contracts which have been used by the government, as well as dozens of others used between private individuals, were examined in order that the best possible means of protection could be incorporated in the new clauses. Owing to the possibility of conditions arising which heretofore never have been a factor between contracting parties, it was necessary to prepare special clauses for such eventualities.

With the idea of speeding up the settlement of disputes arising between the government and the contractor regarding the adjustment of claims which might delay production during the settlement, and further, to make unnecessary the filing of lawsuits in the Court of Claims, a clause provides the means for the immediate adjustment of all such differences. In the event of the arising of any claims, doubts or disputes as to the performance or non-performance of the contract which cannot be settled by mutual agreement, the question is placed before the Secretary of War or his duly authorized representative or representatives for adjustment. In the event that the matter is placed before a board, a majority decision of the latter shall be final, but permission to appeal directly to the Secretary of War within a limited time is allowed.

The government retains the right to terminate any contract in the public interest. If the government finds that the need for any contracted supplies no longer exists, it can terminate the contract within a specified time. Definite provision is made for the payment of existing stocks and raw materials on hand for the completion of the contract, and provision is made for the adjustment of all obligations assumed by the contractor for fulfilling his agreement. Arrangements are also made for the disposal of special facilities provided for the execution of the contract.

MINERAL REPORT

Adopted by Conference—Senate Will Soon Send Bill to President.

Washington, Sept. 28, 1918.

The conference report on the so-called mineral production bill, desired by the Administration to encourage production, conserve the supply and control the distribution of ores, metals and minerals which are needed for war purposes and which hitherto have been largely imported, or which there is an inadequate supply, was adopted by the House on Wednesday and its adoption by the Senate with little delay was predicted. As soon as the Senate has approved it, the bill will be sent to the President for his signature.

The minerals, metals and so forth which the bill covers are as follows:—Antimony, arsenic, ball clay, bismuth, bromine, cerium, chalk, chromium, cobalt, corundum emery, fluorspar, ferrosilicon, fullers' earth, graphite, grinding pebbles, iridium, kaolin magnesite, manganese, mercury, mica, molybdenum, osmium, sodium, platinum, palladium, paper clay, phosphorus, potassium, pyrites, radium, sulphur, thorium, tin, titanium, tungsten, uranium, vanadium and zirconium.

The President is given power, under the bill, to purchase these metals, to make contracts for their production, and to distribute them. He is also empowered to requisition and take over any supplies of these metals, mines, undeveloped mineral properties, smelters, etc., for which a just compensation will be paid.

Shipers' Export Regulation Declaration Procedure Announced.

Washington, Sept. 28, 1918.

Procedure for executing shippers' export declaration when shipment contains different classes of items has been promulgated by the War Trade Board.

Immediately under the export license number must be listed the goods covered by that license. If the number of items is too great to list individually, a general description may be used to conform with Schedule B (Department of Commerce—Classification of Commodities).

Immediately under the items covered by individual licenses will be written a statement similar to the following:—"To be licensed by a Collector of Customs." Immediately following this statement will be either a detailed list of the commodities or a general description to conform with Schedule B.

In every instance where a general description is used, there must be attached to one copy of the Shippers' Export Declaration an invoice describing the goods in detail, and such invoice must be divided to show what items are to be licensed by the collector and what items are covered by individual licenses and the number of such licenses.

This invoice will be attached to and returned with that copy of the Shippers' Export Declaration which is rendered to the War Trade Board by the collector of customs.

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Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 3, 4, 5, 6, 8, and table of contents on page 2.

Saturday Noon, Sept. 28, 1918.

General business in the paint trade continues light, and it is not to be expected that there can be any material change in this situation under existing conditions. The whole energies of the nation are being more and more centered upon war work, and the general business is being neglected. To make up for the loss of general business, the paint industry has the ever-increasing business that comes from the government; and it has been estimated by some well informed men in the trade that 75 per cent. of the business in paints and paint materials is directly or indirectly of government origin. Practically the trade is working for the government.

In a general way, the situation has not changed any since our last report, and there have not been many changes in prices. Red lead in oil has been advanced a cent a pound, but the price of the other lead pigments remains unchanged. The price of pig lead is maintained by the producers' committee, and the fact that it does not fluctuate makes for steadiness in the lead pigments market. Red lead in oil is being used in large quantities by the government.

In the dry color market there is no rush to buy at this time, but producers have been well booked up for a long time, and are working hard to try and catch up with deliveries. The scarcity of labor makes it difficult to speed up production in this line, as well as in other lines. Prices are firm, and the increasing cost of production makes manufacturers reluctant to lower prices in a few instances where there has been a decline in the price of the basic raw material. As a rule, however, raw materials are not declining, and some of them are very scarce indeed.

Following is a detailed report on the principal items of the trade:—

PIG LEAD AND SPELTER.

PIG LEAD.—There has been no change in the lead situation since our last report, and it does not look as if there was any prospect of a change in price in the near future. To all intents and purposes the price has been fixed—the fact that it has been fixed by the producers' committee, and not by the government does not make it any the less a fixed price, and it is being held, although the situation is such that a higher price could easily be obtained. The supply is not equal to the demand, but consumers who have government orders are being taken care of, and aside from this, nothing matters. The price is still 8.07c. per pound New York and 7¾c. East St. Louis.

SPELTER.—There has been a rather quiet market recently in spelter, and the undertone is not very strong. Producers are confident that there is an improvement in the situation in sight, and are not showing a disposition to cut prices, but the market is dull. Spot and September in the local market are quoted at 9½@9¾c.

PIGMENTS.

WHITE LEAD (Basic Carbonate).—There has been no change in the price of white lead, basic carbonate, since our last report. The price of pig lead remains stationary, and there is no change in the situation in any respect to justify a price change at this time. American dry in casks is quoted at 10@10½c. White lead in oil, 100-pound kegs, less than 500 pounds, per 100 pounds, $14; 500 pounds to 2,000 pounds, $12.60; 2,000 pounds to 10,000 pounds, $12.29; 10,000 pounds to 30,000 pounds, $11.97; carload, minimum 15 tons, $11.84.

WHITE LEAD (Basic Sulphate).—There is little change in the situation. The government business is the most important thing in the trade, and producers are making prompt deliveries on their government orders, in spite of labor scarcity. The price of white lead, basic sulphate, remains at 9¼@9¾c. in casks.

RED LEAD.—There was an advance of a cent a pound in the price of red lead oil this week, although the price of dry remained unchanged. There is a large amount of red lead being called for by the government right along, and this fact gives the market a good undertone, in spite of the fact that the general demand is not active. The high price of oil is one of the reasons for an advance in the price of red lead in oil, but this is only one of the items in the increasing cost of production. The character of the red lead sold in oil is somewhat different from that sold dry, and costs somewhat more to produce.

Quotations are:—Red lead, dry, in casks, per pound, 11¼@11½c.; in 100-pound kegs, less than 500 pounds, $14 per 100 pounds; 500 pounds to 2,000 pounds, $12.60; 2,000 pounds to 10,000 pounds, $12.29; 10,000 pounds to 30,000 pounds $11.97; car lots, minimum 15 tons, $11.84. Red lead, in oil, 100-pound kegs, less than 500 pounds, per 100 pounds, $15.50; 500 pounds to 2,000 pounds, $13.95; 2,000 pounds to 10,000 pounds, $13.60; 10,000 to 30,000 pounds, $13.25; car lots, minimum 15 tons, $13.11.

LITHARGE.—Litharge remains unchanged. There is no weakness shown in the market, although the demand is not particularly active, and prices remain unchanged. American powdered in cases is quoted at 10¾@11¼c. per pound; in 100-pound kegs, less than 500-pound lots, the price is $14 per 100 pounds; 500 pounds to 2,000 pounds, $12.60; 2,000 to 10,000 pounds, $12.29; 10,000 pounds to 30,000 pounds, $11.97; carlots, minimum 15 tons, $11.84.

ORANGE MINERAL.—There has been no change in the situation on orange mineral since our last report. The price remains unchanged at 14¼@15¼c., and will probably remain unchanged, unless changing conditions for an advance in the whole list. The constantly increasing cost of production precludes much possibility of any decline.

LITHOPONE. — The leading producers of lithopone see no chance of being able to take care of all the business there is in sight. The scarcity of labor is a very serious matter, and most producers would have no trouble in selling more goods than they are able to manufacture under existing conditions. The advance in price to 8@8½c. for the last quarter of the year seems to be generally considered to have been a very reasonable one, in view of the active demand, and the increasing cost of production.

ZINC OXIDE.—There continues to be a good demand for zinc oxide, and the government is buying in increasing volume all the time. Prices have been fixed for the quarter, and for the rest of the year will remain unchanged. Prices are:—French process, red seal, 13@13¼c.; green seal, 13½@13¾c.; white seal, 14@14¼c. Leaded grades, American process, Standard, 10@10¼c.; Sterling 9¾@10c.; Superior, 9¼@9½c.; Lehigh, 9@9¼c.

DRY COLORS.

There continues to be a rather light demand in the dry colors market outside of the business that comes directly or indirectly from the government Manufacturers are well engaged, however, and generally behind with their deliveries, as they have been for some time. Prices hold steady, and, although they are high, there seems to be a chance of further advances than there is of declines, as the cost of production is increasing right along. There is the same difficulty in regard to getting certain raw materials that there has been for a good while, but the producers have pretty well adapted themselves to the necessities of the occasion; the question of the shortage of labor is a very serious matter, however. There have been no changes in prices announced since our last report, but in all colors the undertone of the market seems very steady.

Blacks.

The demand from government sources for certain lines of black continues right along, and the volume of this business is steadily increasing. The demand for lampblack and carbon gas is particularly good as far as government orders are concerned, but the demand from the general trade is not particularly active. Bone, powdered, is quoted at 5½@12c. per pound; carbon gas at 16@25c.; charcoal, powdered, at 6c.; drop at 5½@15c.; ivory at 16@30c.; lampblack at 15@45c.; vine, at 4c., and

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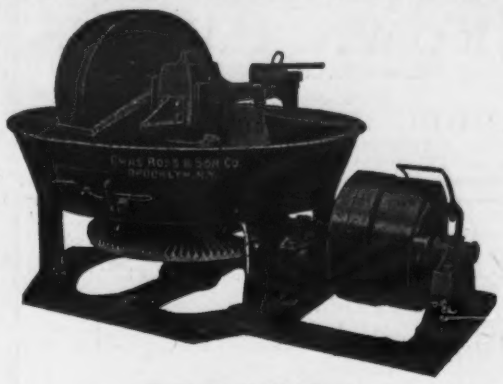

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Blues.

Manufacturers of blues are working hard to fill orders booked some time ago, and are not worried because of the fact that the general demand is not particularly active at this time. No one seems willing to mark down the prices of the iron blues, in spite of the decline that has occurred in yellow prussiate of soda, and they are still quoted at $1.35. There is a steady demand for ultramarin as there always is.

Browns.

There has been no change in the prices of browns since our last report. What has been said of the market in a general way applies to browns as well as to other colors. Sienna, Italian, is quoted at 7@15c. a pound in ton lots in barrels; American, burnt and powdered, is 2½@4c.; Turkish umber is 5@7c., and American, 3½@4c.; domestic Vandyke brown is 3½@4c.

Greens.

Greens are one of the colors that the government finds much use for, and the government business is a decided factor in the market. Dark chrome is in particularly good demand from government sources. The market is steady and prices hold unchanged. Light chrome is quoted at 40@45c.; medium at 50@60c., and dark at 60@70c. Commercial is 8@12½c.; grinders, 12@20c., and jobbers' at 9@14c. Paris green is 40@42c.

Reds.

The makers of reds have been behind with their deliveries for a long time, and they find it very difficult to catch up with so many obstacles in the way of forcing production. The market is steady, although general business is not particularly active. Carmine No. 40 is quoted at $5.50@6, in 11-pound tins; English India red, pure, at 18@24c. per pound, and American, pure, at 8@12c.; oxide red, copperas, in casks, at 15@20c.; native, in lumps, at 3½@4c.; Spanish, at 7@8c.; para red, commercial, at 20@50c.; rose pink, at 35@40c., and vermilion quicksilver, English, $2@2.10.

Yellows.

Yellows hold steady in common with the other colors, and this is another line in which the government is an important consumer. There has been no change in prices since our last report, but there is a steady undertone to the market, and prices are well maintained. Chrome, chemically pure, in ton lots, is quoted at 30@32c. per pound. Dutch or English pink at 15@18c.; first quality French ocher at 8@10c.; domestic is strong at 3@4c.; medium at $30@60 a ton and domestic high grade at 6@10c. Zinc yellow is quoted at 50@53c. a pound.

COLORS IN OIL.

The general demand for mixed paint continues slow, and the trade to a very great extend is depending upon the business that comes from the government. The volume of business of this class is constantly increasing, and promises to continue to do so. The high cost of oil has made paint mixers buy as little as possible since the advance, and there will be little bought until the new crop oil begins to move. There is little chance of any reduction in the price of colors in oil in the near future, for there is a constantly increasing cost of production encountered everywhere, and this promises to continue.

OTHER PAINT MATERIALS.

In most of the minor paint materials the market has seen little change since our last report. There is a better demand for casein, and a great deal is going into government consumption. This makes the market firm, and prices are hardening. It is probable that a new price for barytes will be announced next week. It has been expected for some time that there would be an advance during October to meet the increasing cost of production. It seems to have been difficult, however, to induce some producers to advance, as there is no scarcity. Following are detailed reports on various paint materials:—

BARYTES.—There is a probability that there will be an advance in the price of barytes soon, although thus far most producers are making the same prices that they have been all along. The price is $20@30 at the mills, according to quality, and most goods sells at about $25. There has been talk for several months of an advance in October, owing to the increased cost of production; but competition may postpone it. Several weeks ago an advance was made by some Missouri prodccers, but it did not hold.

BLANC FIXE.—There was no change in the price of blanc fixe this week, although low grades are still selling considerably under the prevailing quotation of 5½@6c. The undertone of the market is not particularly strong. Pulp is quoted at $55@60 a ton.

CASEIN.—There is a good deal of casein being used in government work, and this is furnishing the market with a bullish argument. At this season of the year stocks are small and the spot market is very firm. For small lots as high as 25 cents a pound has been paid, and some of the producers claim that they will not sell under 23c. The fact that there is an embargo on casein is now beginning to have an effect on the market, and the price ideas of producers seem to have been materially altered from what they were when the effort to secure the embargo was being made. There was a lot of India casein—416 bags—received here this week. This is probably the last casein that was afloat when the embargo was put into force. It was on sailing ship. This importation was consigned to a firm of domestic producers, and the importers do not speak highly of their importation declaring that they have no intention of offering it as casein, but that they will sell it to cement makers. There is still some South American goods here, but not a great deal. It is possible that the government may yet decide to give some attention to the plea that has been made to allow a resumption of the importation of casein.

CHALK.—There is nothing that can change the situation as far as chalk is concerned, except an increase in available ship space. As has been said, importers hope that there will be a freer movement possible this winter, and the government's attention has been called to the necessity of increasing the available supply. What is going into consumption is being used almost exclusively by those who have government contracts.

CHINA CLAY.—There continues to be a good demand for all grades of china clay, and the undertone of the market is very steady. Stocks are not large, and everything in the situation

(*Continued on page 37.*)

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Naval Stores Markets

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 3, 4, 5, 6, and table of contents on page 2.

Saturday Noon, Sept. 28, 1918.

There has been less excitement in the naval stores market this week than for some time past. Turpentine has been very weak, and in little demand either in this market or in the Southern centers. Turpentine, in the local market, is noted at 64 cents a gollon, which is a decline of 2 cents for the week. There has been about the same decline in the South. There has been a poor demand for turpentine for some time. The consuming trade does not seem willing to pay more than 60 cents in this market, and can stay out when it wants to and use something else. While turpentine has been quite for some time, there has been plenty of excitement in rosin recently; but the week it begins to look as if the bull campaign had run its course, and that prices had been forced as high as they would go. The market has held well at the top, however, and, although there has not been an active demand, prices are the same as reported last week, and this means that they are the highest ever known. Holders of stocks seem confident of their position, and are not pushing their stuff for sale in a manner that would smash values. There may be a sharp decline when it starts, but holders are not going to allow it to start if they can help it. The remarkable advance that has occurred in rosin recently has not been because of any great increase in consumption, for the exports this year will not be nearly as large as last year, when they were 734,000 barrels. It is doubtful if they will be 500,000 barrels this year—or about a third of what they were in peace times. The advance has been made possible solely by the curtailment of production; and the price seems to have discounted a still further curtailment, which has been freely predicted by those in the business. The industry now hopes, however, that, instead of declaring it a non-essential, the government will give it preference. It is asking that its labor be given protection by deferred classification in the draft, and that the government see to it that the production is kept up to what it has been this year. The industry believes that at least as much turpentine and rosin as was produced this year will be needed every season as long as the war last. Of course, at the end of the war there will be a big demand for export, even if little or nothing goes to Germany for many years. What action the government will take is of course a question. Upon the complaint of consumers it has been making an investigation to see if the price of rosin was forced unduly high, and it may be that it will decide to name a fixed price. The producers say they do not believe that it will be done, but if the government fixes the price on cotton it may do so on rosin, as there has been a greater objection to a fixing of a price on lint cotton than there would be to the naming of a price on rosin. Some action by the government is expected in the near future, but the trade does not know whether it is to be especially favored or whether a price will be fixed.

TURPENTINE.

There is a very dull market for turpentine. It does not seem to be a popular commodity just now. In spite of the fact that producers claim that the cost of production is so high that the price is reasonable, consumers seem to consider it high. The fact that for almost all of its uses there are substitutes for turpentine gives the buyers a power over the market which they do not have in some other markets. Just now consumers are holding back and all the markets are very dead. The price in the local market has come down to 64 cents, a decline of two cents since last week. The decline of a cent or two does not seem to encourage buying to any extent, however, and there is no more wanted at 64 cents than there was at 66 cents. Producers, however, say that they are by no means discouraged with the outlook. They have all along held to the idea that the price would go to 65 cents in the Southern markets this fall, and, while it does not look as if that was possible just now, naval stores men are still of the opinion that there has been such a decrease in production that if producers have patience the market will finally come around to their ideas as to values. In the meantime the market is simply marking time. There is not a heavy movement, but stocks are not accumulating, and in spite of the light sales in the South the shipments from the Southern centers about equal the receipts. The movement to this port is not large, and there is no accumulation here. Receipts at New York this week amounted to 1,533 barrels.

Savannah, Ga., Sept. 27, 1918.

There has been a very soft market in turpentine this week. The demand is very light just now, and several days this week no sales were reported. The price declined a cent and a half between Monday and Thursday, and the market was not firm even at the decline. Following are the prices, sales, receipts and shipments for the week:—

	Prices.	Sales.	Receipts.	Shipments.	Stocks.
Saturday..	58½@—	168	119	11	29,620
Monday...	58½@—	...	69	312	29,383
Tuesday...	58½@—	...	141	11	29,513
Wednesday	58½@—	...	...	15	29,488
Thursday..	57 @—	676	260	...	29,758
Friday....	57½@—	117	34	141	29,641

Jacksonville, Fla., Sept. 27, 1918.

There has been a very dull market in turpentine this week, and the price has eased off. Several days there were no sales at all reported, and there is less interest in the market for some time. The movement is not heavy and the stock is not increasing. Following is the record of the week's market:—

	Prices.	Sales.	Receipts.	Shipments.	Stocks.
Saturday..	58½@—	...	213	312	56,957
Monday...	58½@—	...	519	418	57,058
Tuesday...	57 @—	320	343	809	56,592
Wednesday	57½@—	...	130	329	56,393
Thursday..	57 @—	134	211	89	56,515
Friday....	57 @57¼	412	567	200	56,882

ROSIN.

There has been no further advance in the price of rosin this week, but the market has not been soft because it has held its advance, and to hold at the top after such an advance as rosin has seen recently is certainly an indication of underlying strength. It must be remembered that rosin which a few months ago sold at $6 a barrel is now $14.50 a barrel, and there has been a proportionate advance in all the grades. Water white is still $16.25, and such prices were never known before. It was inevitable that the advance must stop some day. It went further than even the most optimistic bull had ever thought that it could go, and the price continued to climb dollars a barrel after consumers had made a protest that started a governmental investigation into the question as to whether or not it was too high. There has been a slackening of the demand, and it is now a question as to whether or not prices can be held at the present level. There has been no effort on the part of holders thus far to crowd the market, and no great pressure to sell either here or in the South. This would seem to be an indication that there is not as much held speculatively as some have believed, but the test of the market can only come when selling really starts. If it becomes evident that the advance has run its course it will be very probable that there will be a good many holders who will wish to realize, and unless there is a better demand than has been apparent this week, the market would not stand the pressure of free offerings without giving way. After such an advance a reaction would be natural, but, of course, if the buying all along has been for consumption, as some of the bulls have claimed, then there is nothing to cause any decline. There has been a great decrease in production, of course, but this decrease was in evidence a long time before the advance started. There has been a great deal of talk of a further curtailment in production, but it is certain that with rosin at the present level there is every incentive to produce as much as possible, and producers will be able to compete with almost any industry for labor. The talk of a fixed price has undoubtedly had some influence on forcing up the price, as it has been proven in England as well as in this country that in almost every commodity talk of price fixing has been the signal for an advance. Rosin producers are very confident, however, that the price will not be fixed. Following are the quotations on the different grades:—

	Last week.	This week.
B	$14.50 @—	$14.50 @—
C	14.50 @—	14.50 @—
D	14.70 @—	14.70 @—
E	14.90 @—	14.90 @—
F	15.00 @—	15.00 @—
G	15.25 @—	15.25 @—
H	15.25 @—	15.25 @—
I	15.30 @—	15.30 @—
K	15.75 @—	15.75 @—
M	15.85 @—	15.85 @—
N	15.90 @—	15.90 @—
W. G.	16.25 @—	16.25 @—
W. W.	16.25 @—	16.25 @—

Savannah, Ga., Sept. 27, 1918.

Following are the sales, receipts, shipments and stocks for the week:—

	Sales.	Receipts.	Shipments.	Stocks.
Saturday	334	631	195	66,168
Monday	71	162	1,335	64,995
Tuesday	337	892	2,440	63,449
Wednesday	392	5	162	63,292
Thursday	218	1,316	159	64,449
Friday	1,062	204	651	64,002

(Continued on page 37.)

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PAINT MARKET.

(Continued from page 32.)

is against a decline. Imported is quoted at from $20 to $40 a ton and domestic at from $15 to $22.50.

COBALT OXIDE.—There is little new in this market. There is a demand sufficient to take care of the available supply, and the price holds at $1.60 to $1.65 a pound. It is a much restricted market, as the trade is controlled by the regulations of the Canadian government.

COPPER OXIDE.—There is a good demand for copper oxide, and it is increasing, as it is used in ship paints. It is quoted at 28@32c. a pound.

PUTTY.—There has been no change in the price of putty since the advances which were noted last week. There is a good demand right along, and the government is a large consumer. Commercial is quoted at $3.10 per 100 pounds in tubs and pure at $4.50. Pure in linseed oil is $6.75 per 100 pounds. To the tub price $1.60 per 100 pounds must be added for the price in five-pound cans and $3 per 100 to get the price in one-pound cans.

TALC.—There continues to be a good demand for American talc, and the price is very firm, due to the fact that the cost of production is constantly increasing. It is quoted at from $20 to $40 a ton, according to quality, but considerably higher is asked on the spot for small lots.

TRIPOLI.—The price of this material is largely a question of the cost of labor and transportation. In carload lots the New York price is 1⅛@1¼c., and as high as 2½c. is asked for small lots.

WHITING.—There is little chance for any one to get this material unless he has a government contract. The scarcity is such that the big handlers are not attempting to supply any one at the quoted prices except firms that are working for the government. The consumer who goes into the market for a small lot on the spot must pay whatever is asked. Quted prices, however, remain unchanged. Commercial, in car lots, is quoted at $1.25; gilders' bolted, at $1.30@1.35; extra gilders, at $1.35@1.50; English cliffstone, at 75c.@$2.27, and American paris white, at $1.50@1.75.

VARNISH GUMS.

There is little change in the situation as far as varnish gums are concerned. The high prices, of course, hold down consumption to a great extent, but as the high prices are due to a real shortage, the market does not need a rush to buy to hold prices very steady. The imports from the Orient are not large enough to furnish any relief to the situation, and there is no chance of stocks growing any larger for a long time to come. There is a growing demand from government sources, and the day-to-day demand, while not great in volume, is large when considered with reference to the available supply, and the market continues to show a firm undertone. There has been no change in prices since our last report. Following are the quotations:—Manila, pale, is quoted at 22@23c.; dark, hard, at 21@23c.; nubs at 16@16½c., and standard sorts at 16@16½s.; pale nubs of gum lac is 68@69c. Pontinak, selected fine, is quoted at 28@30c.; No. 1 at 21¾@33c.; nubs at 16@16½c., and chips at 15½@16c. Damar, Batavia, is quoted at 29@30c.; Singapore, No. 1, at 34c.; No. 2, at 25c. and No. 3, at 15½@16c. Kauri, No. 1, is quoted at 55c.; No. 2, at 32@40c., and No. 3, at 20c. East India bold is quoted at 24c.; nubs, at 18½c., and chips at 15½@16½c. Glisonite is selling at $45@55 a ton, and manjak at $40@80.

GLUES.

There has been a better tone to the glue market this week than has been noticed for some time, and while prices have remained quotably unchanged, there is a very steady undertone, and the tendency seems to be towards a higher level. There is a constantly increasing cost of production that is a good excuse for a firm market, and there is a good demand, especially from government sources. The government business is constantly increasing in volume, and is a very important factor in the trade. There is a steady demand for the high grades, and the cheapest quality is also finding a ready sale. The scarcity of labor is becoming a more and more serious matter with manufacturers. Extra white is quoted at 36@45c. a pound; medium white at 31@35c.; cabinet at 31@40c.; low grade cabinet at 24@27c.; foot stock at 16@22c.; brown foot stock at 18@22c., and common bone at 15@20c.

WINDOW GLASS.

There is a better demand for window glass than many in the business had expected at this time. Of course, the demand is not normal, but at the same time domestic consumption is not small, when the demands of the government are taken as part of the general business. The strongest demand is for low grade goods, and the curtailment in building operations has of course hit the trade very hard; at the same time there has perhaps been an even greater per cent of decrease in production than there has been in consumption; and the outlook as far as an increase in production is concerned is not as good as the outlook for an increase in consumption. The lifting of the ban by the Fuel Commission would not have any effect on the labor situation, and that is the most serious matter from the manufacturers' standpoint. There has been no change in discounts, and none is probable at this time; but the practice of making discounts subject to stock is one that the situation will make more universal in the future than it has been since the first curtailment of production.

Oscar Schlegel Obtains Judgment Against Peter Cooper Glue Factory.

The Oscar Schlegel Manufacturing Company has obtained a judgment of $7,214 against the Peter Cooper glue factory in the Supreme Court of the State of New York. The action was based upon a failure to deliver goods as contracted for. The plaintiff claimed a contract with the glue factory to deliver to it all of a certain kind of glue it might need at a fixed price. The glue was not delivered when the price advanced, and the plaintiff was forced to buy in the open market at the advance. Judgment was asked for the difference between the contract price and the price at which the glue was finally purchased, and the court assessed the damages at the sum stated.

NAVAL STORES.

(Continued from page 35.)

ROSIN QUOTATIONS.

	Prices.	Same time last year.
W. W.	$15.00 @—	$7.60 @—
W. G.	14.60 @—	7.40 @—
N	14.50 @—	7.22½@—
M	14.40 @—	6.25 @—
K	14.25 @—	6.05 @—
I	14.10 @—	5.90 @—
H	14.10 @—	5.90 @—
G	14.10 @—	5.85 @—
F	13.85 @—	5.80 @—
E	13.75 @—	5.80 @—
D	13.60 @—	5.80 @—
B	13.50 @—	5.80 @—

RECEIPTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This month....	3,472	13,667	7,519	26,386
This season,net	29,779	105,904	60,603	185,181
Other ports....	240	....	1,937	10,668
Gross receipts..	30,019	105,904	62,540	195,819

SHIPMENTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This month....	2,233	19,750	10,963	35,283
This season....	24,814	138,875	42,100	215,180
Foreign	1,274	29,481	7,100	27,507
New York.....	6,828	43,444	15,809	99,555
Sundries	16,712	65,950	19,191	88,118

Jacksonville, Fla., Sept. 27, 1918.

Following are the sales, receipts, shipments and stocks for the week:—

	Sales.	Receipts.	Shipments.	Stocks.
Saturday	...	619	1,995	127,827
Monday	2,000	1,689	770	128,746
Tuesday	1,029	911	562	128,995
Wednesday	990	563	1,148	128,410
Thursday	1,028	713	895	128,228

ROSIN QUOTATIONS.

	Prices.	Same time last year.
W. W.	$15.00 @—	$7.00 @—
W. G.	14.90 @—	7.35 @—
N	14.75 @—	7.20 @—
M	14.50 @—	6.50 @—
K	14.10 @14.25	6.25 @—
I	13.85 @14.15	6.10 @—
H	13.85 @—	6.05 @—
G	13.80 @13.85	6.05 @—
F	13.70 @—	6.00 @—
E	13.60 @—	5.90 @—
D	13.50 @—	5.90 @—
B	13.20 @—	5.90 @—

RECEIPTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This week.....	992	3,163	1,344	4,886
This month....	5,898	19,780	10,516	34,745
Since April 1..	48,261	153,379	86,787	244,927

SHIPMENTS.

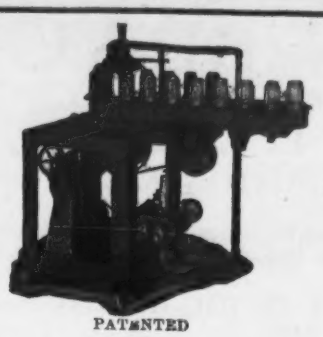
	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This week.....	1,556	2,580	1,425	4,662
This month....	6,884	28,941	8,681	49,437
Since April 1..	49,087	203,205	70,208	269,943
Foreign	....	....	....	6,750
Domestic	49,087	203,205	70,208	263,193

OTHER NAVAL STORES.

TAR AND PITCH.—There has been a quiet market in both tar and pitch this week, but the undertone has been good, and tar has advanced 25c. a barrel, making the price of kiln burned $13, and on retort $14. There were 346 barrels received here during the week. Pitch is unchanged at $7.75 a barrel.

ROSIN AND PINE OIL.—There has not been any change in price on rosin oil this week, but there must be a decline soon, unless turpentine shows more strength than it is now showing. The market is quiet, and only 142 barrels were received here during the week. First run rosin oil is quoted at 74c., second at 77c., third at 82c. and fourth at 92c. Pine oil is steady around 60c.

TAR OIL.—There is little that can be said about this market. There is a steady demand for small lots, but the total volume of the business is not large. Small lots bring considerably more than the bulk quotations of 35c. to 37c.



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THERE "PITTSBURGH" WAREHOUSE IN YOUR VICINITY

WESTERN FLAXSEED, OIL, CAKE AND MEAL

MINNEAPOLIS.

Minneapolis, Minn., Sept. 25, 1918.

The passing of the September future is having a sustaining effect on cash flax values this week, as Duluth is bidding up sharply for seed to arrive this month. This bidding is taking some flax from this market by diversion and direct. A number of cars were bought here during the week past and rushed to Duluth for application on the September contracts. Most of the seed contained heavy dockage, so the Duluth elevators were able to make a profit on their deals. All futures have shown a tendency to react in spite of the rather unfavorable turn of the crop news. Trading in the futures is light and featureless, with the exception of the closing up of September deals. Shorts in that future were very nervous for a time and covered freely, a sharp bulge resulting. Deferred futures were draggy and finally the September began to yield and sold closer to the deferred. All futures are upside down as far as carrying charges should influence prices. Carrying $4 flax is rather expensive yet, the more deferred the future the lower the price.

Offerings of seed to arrive were liberal on the last bulge, and it looks as though most of the seed the shippers had in sight was disposed of when prices were up. During the past week to arrive offerings were light, more so than the trade expected. In the main, the crushers were inclined to hold back on account of the situation created by strength in the September future. With the September deals closed up, cheaper supplies are looked for, and the crushers can afford to wait for a week until open trades are evened up. One or two of the crushers are badly enough in need of supplies to offer some competition for spot offerings. Offerings of spot increased during the week, and this week are fair compared with offerings to arrive.

North Dakota and Montana seed has been consigned, and a few cars arrived during the week. This seed is of good quality, though no better than usual. Buyers are very anxious to get it on account of the low oil test shown by Minnesota seed. They are willing to pay quite a premium for choice seed, owing to the comparative oil value.

The situation this year is rather out of the ordinary, and developments are not quite as favorable as expected. The fact that the crop flowered several times during the growing season has been mentioned in this column, and this peculiarity of the crop season threatens to result in an important reduction in the yield. It seems that every heavy rain following dry spells developed a new crop of blossoms on plants, and the result was that much of the seed matured unevenly. Bolls on some plants were fully ripened, while the plants were fairly green and carrying undeveloped bolls. Early developed bolls in South Dakota territory show a tendency to drop off easily, and any wind of noticeable velocity has shaken many of them loose. Several reports have been received here of late, saying that flax fields showed an abnormal number of lost bolls. A traveling representative of a local commission house, who has been in the grain business for many years, reported a serious situation in Western South Dakota. Fields that promised to yield 15 to 17 bushels to the acre will probably not produce more than a normal yield, because the bolls dropped off so easily. When cutting started the shock of the machines dislodged an alarming number of bolls in addition to those shaken loose by the wind. This is true of part of North Dakota territory bordering on South Dakota. Not enough threshing has been done in the territory mentioned to give an accurate line on what is to be expected, but the ending of the flax season is not as favorable as earlier developments led the farmers to believe they would be.

Reports from Montana say that seed long dormant in the ground came to life recently and a perfect stand developed, but there is no chance of this seed coming through to harvest at this time of the year. It is being plowed under by the farmers, who are preparing for next year's crop.

The final outturn of the Canadian crop, as indicated by the report of the Northwestern Grain Dealers' Association report, is very satisfactory compared with what was expected, but so far no offerings of seed have been made here. Prices for spot seed are strong enough to make shipment to Duluth profitable, but there is not enough time for the consignments to arrive during the month of September, when it is wanted.

Harvest of the crop in North Dakota is being delayed to a serious extent, and farmers fear fall rains will do damage. The movement of wheat has been held up, and a report received here during the week said that at more than 200 stations wheat was being piled on the ground for lack of capacity at interior elevators to take care of the farm offerings. The necessity of keeping the threshing crews in action is strong and it will not be until wheat is out of the way that flax will receive proper attention. Anxiety to thresh wheat has resulted in some delay in cutting flax, too. Cars are scarce in the interior, and a smaller seed movement is to be expected during the next week or so. Crushers have a large quantity bought for September shipment, and hope that supplies will be put in transit on schedule, but matters are not favorable at this writing. It may be that shipment of flax will be allowed in preference to some other grains, because the crushers are in a position to absorb arrivals promptly and prevent delay in handling box cars. Elevator stocks of seed at Duluth and Minneapolis are being built up quite rapidly.

Spot No. 1 seed is selling at 4c. over Duluth October price, and arrive at October price. Buyers worked the change in basis during the week, as it was impracticable to make further shipments from Minneapolis to Duluth to apply on September contracts.

Linseed Oil.

The demand for linseed oil is not very active, but the crushers find a market for the moderate amounts they have to offer. Most of their oil is going on old and maturing contracts. Disappointment regarding the securing of Argentine seed resulted in the deferment of deliveries on some contracts, and the sellers are taking care of the business through the assistance of new domestic seed. Most of the oil moving is going to the government departments or to contractors for government material. Few cars are being shipped to regular oil absorbing industries and the demand from paint interests is surprisingly small. The encouragement is to save as much oil for government purposes as possible and these wants are not being filled with satisfying promptness in some cases.

Shipping directions on file are plentiful and the car situation remains favorable. Crushers having private tank cars are getting good service on them and do not feel any lack in this direction. Box cars are furnished promptly as a rule. The labor situation is fair with some mills and unfavorable with others. Some plants are in no position to operate more than 50 per cent. of capacity, while at least one of them is operating full. Operations of the plants will increase as fast as the seed and labor supply will permit of.

Spot oil is quoted around $1.90, according to size of lot wanted and time of delivery.

Linseed Oil Meal.

The demand for linseed oil meal still exceeds the supply and crushers have no difficulty in disposing of their output. Supplies are moving as promptly as turned out, and there is no reserve on hand. Orders are coming from a wide territory. Farmers are feeding mill offal of all kinds on a freer scale than ever before on account of the prevention of price advances. They can bring their cheapest grains to market and still save money buying millfeed. Feeding of dry material helps to create a demand for oil meal, and this demand promises to take care of considerable of an increase in the output. If the lid was taken off of the market crushers would be able to obtain higher prices for their meal and still sell capacity. A decline in feeding grains would no doubt cut down the demand to some extent, but there is nothing to indicate a complete obliteration of it. The silo capacity of the Northwest and Central States has been increased decidedly during the past year, but the demand for millfeed and oil meal shows abnormal volume. Shipping directions are always on hand and the car situation is regarded as favorable.

Prices quoted $56 per ton.

Daily closing prices of seed at Minneapolis, for the week ending September 25, 1918, and for the same week last year:—

	1918 Cash.	1918 Arrive.
Thursday	—@4.15	—@4.06
Friday	—@4.11	—@4.00
Saturday	—@4.13	—@4.00
Monday	4.06 @4.10	—@4.10
Tuesday	4.07 @4.11	—@4.07
Wednesday	4.06 @4.10	4.06 @4.08

	1917 Cash.	1917 Arrive.
Thursday	3.49½@3.51½	3.49½@3.51½
Friday	3.52½@3.55½	3.52½@3.55½
Saturday	—@3.52	—@3.50½
Monday	—@3.52	—@3.47
Tuesday	—@3.52	—@3.48¾
Wednesday	—@3.55	—@3.49¼

Daily receipts of domestic seed for the week ending September 25, 1918, and for the same week last year, in bushels, were:—

	Duluth 1918.	Duluth 1917.	Minneapolis 1918.	Minneapolis 1917.
Thursday	11,198	14,145	28,080	4,000
Friday	17,215	17,522	20,520	11,000
Saturday	7,287	5,619	7,560	9,000
Monday	1,090	13,743	47,620	17,000
Tuesday	8,093	3,280	20,710	18,000
Wednesday	11,425	19,549	21,800	6,000
Totals	56,308	65,858	146,290	65,000

Total receipts of seed for the crop year, September 1, 1918, tto September 21, 1918, at Chicago, Duluth and Minneapolis, and for the corresponding period a year ago, in bushels were:—

	1918.	1917.
Chicago	11,000	2,000
Duluth	61,471	124,781
Minneapolis	280,270	142,000
Totals	352,741	268,781

Shipments of linseed oil and linseed oil cake and meal for the week ending September 25, 1918, and for the corresponding period a year ago, from Minneapolis, in pounds, were:—

	1918 Oil.	1918 Cake.	1917 Oil.	1917 Cake.
Thursday	352,478	775,662	355,420	414,819
Friday	426,733	1,057,762	463,465	386,060
Saturday	76,825	899,295	341,956	312,095
Monday	531,795	973,216	272,016	442,610
Tuesday	96,495	253,395	319,310	850,245
Wednesday	571,740	874,030	554,785	785,115
Totals	2,056,086	4,833,360	2,306,952	3,191,544

Daily shipments of domestic seed for the week ending September 21, 1918, and for the corresponding period a year ago, in bushels, were:—

	Duluth 1918.	Duluth 1917.	Minneapolis 1918.	Minneapolis 1917.
Thursday	....	....	....	....
Friday	....	36,036	2,800	1,120
Saturday	....	....	2,800	....
Monday	16,955	....	....	....
Tuesday	....	11,496	1,060	....
Wednesday	....	1,485	2,120	....
Totals	16,955	49,017	8,780	1,120

Total shipments of seed for the crop season, September 1, 1918, to September 24, 1918, at Chicago, Duluth and Minneapolis, and for the corresponding period a year ago, in bushels, were:—

	1918.	1917.
Chicago	....	....
Duluth	30,824	114,810
Minneapolis	42,770	23,240
Totals	73,594	148,050

Stocks of seed in public store for the week ending September 21, 1918, and for the corresponding period a year ago. This table also gives the stocks for the week ending September 14, 1918, in bushels:—

	Sat., Sept. 21, 1918.	Sat., Sept. 14, 1918.	Sat., Sept. 23, 1917.
Duluth	58,657	21,302	218,858
Minneapolis	16,766	2,988	14,423
Totals	75,423	24,290	233,281

DULUTH.

Duluth, Minn., Sept. 25, 1918.

Flax is more and more inclined to be bearish these days, but a slump is prevented by reason of the fact that trading is down to a settled basis. The crushers are running on only a 50 per cent. basis, and are taking that much, so there is something definite to go by. Minneapolis mills, for instance, want fifteen cars a day, and are getting that amount, with a surplus over for others.

Bearish news, on the other hand, is that the late crop is coming along fine and the earlier crop is larger than was expected. Argentine receipts have been reported for the last week, and the movement of the Northwestern seed is about as free as it is desired to be.

Crushers, of course, have no need to run to full capacity, as the government restrictions on building hold down the necessity. About all the oil that is being supplied is to the government itself. Everything is bearish in tone, and speculation right now is regarded as more than dangerous.

The closing prices for the past six trading days, compared with the same period a year ago, were:—

CLOSING.

	1918 Cash.	1918 Arrive.
Thursday	$4.15 @4.18	$4.16 @—
Friday	4.11 @4.14	4.11 @—
Saturday	4.13 @4.15	4.13 @—
Monday	4.15 @4.17	4.15 @—
Tuesday	4.15½@4.17½	4.07 @—
Wednesday	4.15 @4.16	4.06 @—

	1917 Cash.	1917 Arrive.
Thursday	$3.46½@—	$3.46 @—
Friday	3.49½@3.50½	3.48½@—
Saturday	3.47 @3.49½	3.46½@—
Monday	3.47 @3.50	3.45 @—
Tuesday	3.47 @3.50	3.46¾@—
Wednesday	3.50 @3.54	3.47½@—

	1918 Sept.	1918 Oct.	1918 Nov.	1918 Dec.
Thursday	$4.15	$4.06	$4.03	$4.02
Friday	4.11	4.00	3.97	3.94
Saturday	4.13	4.00	3.98	3.95
Monday	4.15	4.06	4.03½	4.01
Tuesday	4.15½	4.07	4.04	4.01
Wednesday	4.15	4.06	4.03	4.00½

	1917 Sept.	1917 Oct.	1917 Nov.	1917 Dec.
Thursday	$3.46½	$3.46	$3.45	$3.40½
Friday	3.49½	3.46	3.45	3.42½
Saturday	3.47	3.46½	3.45½	3.39½
Monday	3.47	3.45	3.44	3.38
Tuesday	3.47	3.46¾	3.45¼	3.39½
Wednesday	3.50	3.47½	3.46¾	3.40

Receipts and shipments for the past six trading days, compared with the corresponding period last year, were:—

DOMESTIC.

	Receipts 1918.	Receipts 1917.	Shipments 1918.	Shipments 1917.
Thursday	11,198	14,145	....	....
Friday	17,215	17,522	....	36,036
Saturday	7,287	5,619	....	....
Monday	1,090	13,743	16,955	....
Tuesday	8,093	3,280	....	11,496
Wednesday	11,425	11,549	....	1,485
Totals	56,307	65,858	16,955	49,017
Week ago	44,116	62,224	2,620	6,649

BONDED.

	Receipts 1918.	Receipts 1917.	Shipments 1918.	Shipments 1917.
Thursday	....	....	....	....
Friday	....	290	....	....
Saturday	....	....	....	....
Monday	....	....	....	....
Tuesday	....	....	....	....
Wednesday	....	454	....	....
Totals	....	744	....	....
Week ago	....	....	....	....

The number of bushels of flax in store in Duluth elevators at the end of the calendar week, closing Saturday night, was as follows:—

	In store.	Change.
Bonded	....	....
Domestic	58,657	+37,395
Totals	58,657	+37,395

The number of bushels in sore up to the close of business last night was as follows:—

	In store.	Change.
Bonded	....	....
Domestic	78,000	+19,000
Totals	78,000	+19,000

Duluth and Minneapolis stocks of flax at the close of the calendar week, compared with the corresponding week last year, were:—

	1918.	1917.
Duluth	59,000	220,000
Minneapolis	17,000	14,000
Totals	76,000	234,000

Cars of flax received at Duluth, Minneapolis and Winnipeg during the past week, compared with the corresponding week last year, were:—

	1918.	1917.
Duluth	73	53
Minneapolis	135	75
Winnipeg	..	10
Totals	208	138

Closing prices for bonded flax each day of the week ending today, compared with the prices one year ago:—

	1918. N.W.	1917. N.W.
Thursday	...	...
Friday	...	...
Saturday	...	...
Monday	...	...
Tuesday	...	...
Wednesday	...	...

The following is a comparison of the closing prices of domestic flax and a week ago today:—

	Today.	Last Wednesday.
Cash	$4.16	$4.24
Arrive	4.06	4.22
September	4.15	4.21
October	4.06	4.14
November	4.06	4.12
December	4.00½	4.07

Flax in store and daily changes:—

	Domestic.	Change.	Bonded.	Change.
Thursday	52,000	+11,000	....	....
Friday	69,000	+17,000	....	....
Saturday	76,000	+7,000	....	....
Monday	59,000	—17,000	....	....
Tuesday	67,000	+8,000	....	....
Wednesday	78,000	+9,000	....	....

BUENOS AIRES.

There was a sharp decline in the price of flaxseed in the Buenos Aires market this week, the decline amounting to 26 cents a bushel. It looks as if there was going to be much more seed than can be taken care of if the United States does not repeal its rule against the importation of foreign seed. There is still some seed being exported from Argentine to the United States, and 163,000 bushels were shipped this week. There will be more shipments after a short time longer, however, and if there was no embargo it is not probable that the United States would want as much flaxseed from Argentine as it took this year. The visible supply at Buenos Aires is 1,600,000 bushels. Following are the opening and closing prices for the October contract in Buenos Aires for each day of the week:—

	Open.	Close.
Saturday	$2.72	$2.72¼
Monday	2.73	2.72½
Tuesday	2.72	2.65
Wednesday	2.65	2.60¼
Thursday	2.58	2.58½
Friday	2.52	2.46

Shipments for the week and season to date compare as follows:—

	Present week. Bushels.	Last year. Bushels.
United States	163,000	324,000
United Kingdom	252,000	.....
Continent	.....	23,000
Totals	415,000	247,000

Visible supply, 1,600,000 bushels. Last week, 1,600,000 bushels.

	Season to date. Bushels.	Last year. Bushels.
United States	9,410,000	800,000
United Kingdom	3,197,000	250,000
Continent	176,000	2,359,000
Totals	12,783,000	3,499,000

Cottonseed Received and Crushed During August.

The quantity of cottonseed received at mills in the United States during the month of August was 146,036 tons, according to a preliminary report issued by the Bureau of the Census, Department of Commerce. This does not include 36,375 tons on hand at the beginning of the month, nor 1,486 tons reshihpped. During the month 45,729 tons of seed were crushed, and 136,682 tons were on hand on August 31.

The production of crude oil was 12,383,734 pounds; refined oil, 12,447,072 pounds; cake and meal, 21,753 tons; hulls, 11,145 tons; linters, 13,231 bales, and hull fiber, 28,477 bales. On August 31 stocks of crude oil were 10,420,132 pounds, and of refined oil, 195,665,323 pounds.

EXPORT LICENSE.

Expiration Regulations Changed as of Date of September 30.

Washington, Sept. 28, 1918.

Revised regulations have been adopted by the government covering the date of expiration of export licenses. These govern shipments of drugs, chemicals, paints, oils and many other commodities. The War Trade Board's announcement, which is effective September 30, 1918, states that such licenses shall be deemed to have been used within the period of their validity. The announcement follows:—

(a) If the through export bill of lading is issued and signed on or before the expiration date of the license and subsequent to October 9, 1917; or,

(b) If the ocean bill of lading is dated on or before the expiration date of the license; or,

(c) If the dock receipt is dated on or before the expiration date of the license and the ocean bill of lading covering the same shipment is dated not later than 30 days after the expiration date of the license; or,

(d) If the railroad notice of arrival issued at the port of exportation is dated on or before the expiration date of the license, and if the ocean bill of lading covering the same shipment is dated not later than 10 days after the expiration date of the license, provided that the provisions of this paragraph (d) shall apply only when the merchandise is exported on vessels loaded at railroad docks, where dock receipts as provided for in paragraph (b) cannot be issued by the vessel or its agents; or,

(e) If the shipment is on a lighter which arrives on or before the expiration date of the license, alongside the vessel upon which the shipment is to be loaded, and if the shipment is, in fact, loaded on that vessel and ocean bill of lading is signed not later than 30 days after the expiration date of the license.

The railroad agent issuing a through export bill of lading (combination rail and steamship bill covering goods to destination) will forward to the Bureau of Exports, War Trade Board, Washington, D. C., one copy of such bill of lading after there has been noted thereon the port of exit through which the shipment will pass.

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VEGETABLE, ANIMAL AND FISH OILS

Saturday Noon, Sept. 28, 1918.

In spite of the fact that linseed oil seems to be in a rut, it is easily the most interesting feature of the oil market. The government is showing the greatest interest in the matter of conserving linseed oil and is doing all in its power to assist in finding a satisfactory substitute for this most important of drying oils. The use of soya bean oil is growing steadily, and many experiments are being made to develop its drying properties; all other substitutes are being used more than ever before, but linseed must remain, par excellence, the oil of the painter. The government this week has refused licenses to export linseed oil to Cuba, although it is anxious to furnish that country with everything it can. The trade is wondering whether the action of the government in forbidding the sale of oil on contract for delivery after November to any one except those who have government contracts is paving the way for more rigid control by the government, and it is remembered that in England the government is in complete control of the linseed oil situation with a fixed price. The situation in England is different from that existing in this country, however, so that really the action that has been taken on the other side is not a criterion to be followed here. There is no reason for expecting that there will be as great a shortage this year as there was last, as the flaxseed crop in this country and Canada promises to turn out so well that some crushers are selling Argentine seed which they have on hand and don't need at once and replacing it with contracts for domestic seed. There is still seed coming from Argentina, and the price there has had a very sharp decline this week. There is a feeling in the trade that the government has no idea of fixing the price of linseed oil or of trying to allocate the domestic production; but at the same time there is a feeling of uncertainty, and the market is far from certain as to what the future may develop.

Cottonseed is so much regulated that there is very little interest in that market. There is no question as to there being an adequate supply, no matter what the total outturn of the cotton crop is, and the feeling is general that the price as fixed will be allowed to stand for the entire season.

China wood oil is higher, as far as offers from the Orient are concerned, but there is constantly oil being offered for prompt shipment from the Pacific coast at prices under what importers who are receiving oil say they are not able to meet. This is oil that has been carried on speculation, and there is oil being sold that must show some one what a broker once called a "very handsome loss."

Generally the market in animal and fish oils is steady, and a number of advances in the less important oils have taken place this week.

LINSEED OIL.

The leading crushers continue to quote $1.90 a gallon as the spot price of linseed oil, and to admit that $1.88 might be done. The spot market in linseed oil is a very slow affair just now, however. No one who can possibly wait a while is going to buy spot oil at any such figure, and the producers are making no effort to push for a spot business at this time. Now and then some one has to have a little oil, and, unless he cares to go shopping for resale oil, he pays the price. There are rumors in the market all the time of how cheap resale oil can be bought, but, in point of fact, the market seems to be pretty well cleaned up. There is a good deal of business being done for October and November delivery, and crushers are not bound by the orders of the government to sell these months to consumers with government contracts, as they are all deliveries after November. The prevailing price for October delivery is $1.83, and for November delivery $1.81. Where contracts are made to protect consumers with government contracts, the price named for delivery after November seems to be generally made the same as the November price. With the outlook for as good a crop as now seems assured, these prices seem high, but the situation is a very much disturbed one, and crushers do not care to take any chances. They are having a great deal of trouble to secure the labor to crush the seed they now have on hand, and they have no idea as to what the situation will be by the time contracts for distant delivery must be filled. The fact that the government is already regulating the situation to a certain extent, it is feared, will pave the way to further regulations, and this is taken as a bullish factor in the market. The government is evidently alarmed for fear that there will be a shortage if the embargo on the importation of foreign seed is continued durthe whole new season, and the fact that this fear on the part of the government is made plainly manifest is naturally an argument against price-cutting. The price is high, however, and, while crushers are standing by their guns, they are watching each other very closely, and if one interest would start to undersell, the lower price would probably be very promptly met all around. Every day or two there is a report that the price is being cut, but no one seems to be able to prove it on his competitor.

The government is evidently very desirous to maintain the embargo, but it could be lifted at any time if the situation made such action necessary, and then there would be no scarcity of seed, for crop conditions in the Argentine are reported to be very good.

Following are the quotations in the New York market, in carloads for each day of the week:—

Monday	$1.88 @1.90
Tuesday	1.88 @1.90
Wednesday	1.88 @1.90
Thursday	1.88 @1.90
Friday	1.88 @1.90
Saturday	1.88 @1.90

Chicago, Sept. 26, 1918.

Except for occasional resale lots there was practically nothing to attract interest in the linseed oil market in Chicago again this week. Dealers still continued to quote around $1.90@1.92, with September forward prices ranging around $1.84.

Foreign Quotations for Flaxseed.

The quotations for flaxseed in the Hull and London markets are now given at a fixed price of £30 per ton.

	Buenos Aires, gold per bushel.	Winnipeg, per bushel.
Saturday	$2.72	$4.05
Monday	2.72½	3.95
Tuesday	2.65	3.95
Wednesday	2.58	3.94½
Thursday	2.52	3.90
Friday	2.46	3.92½

Foreign Quotations for Linseed Oil.

Daily cable advices from Liverpool, London, Hull and Amsterdam give the following spot quotations for linseed oil in those markets:—

	Liverpool, per ton.	London, per ton.	Hull, per ton.	Amsterdam florins per 100 kilos.
Saturday	..	£75	..	..
Monday	..	75	..	..
Tuesday	..	75	..	..
Wednesday	..	75	£75	..
Thursday	..	75	75	..
Friday	..	75	75	..

LINSEED CAKE AND MEAL.

The market for cake and meal in this part of the country continues quiet, as is to be expected at this season. There are considerable amounts of both cake and meal being carried by the crushers, but stocks are not large enough to be burdensome, and the producers seem to be fairly well satisfied with the outlook. The situation is not nearly as bad as it might be expected to be with exports shut off. There may be some movement to England this winter as there is a loud demand for cake and meal there. In the West the market is reported good.

COTTONSEED OIL.

There is little change in the situation in cottonseed oil which is regulated about as closely as it is possible for a market to be regulated. It is the general idea now that the price as fixed will be allowed to stand for the entire season, and there seems to be no reason for expecting that it will be changed. The 17½c. at the mill price for raw seems satisfactory to the farmer, and the leading consumers do not want it changed. There is a chance for vegetable oils from the Orient to compete at this figure, and that is agreeable to oil men. The most interesting matter the trade has discussed is the possibility of an increase in exports this year. Our allies would like to have a great deal of cottonseed oil, but the only question is whether or not they would prefer to have something else as long as ship space is so limited. It is fair to presume, however, that there will be a decided improvement in the export situation before the end of the season, however.

Exports for the month of August were 3,500,256 pounds. This was not as much as was exported during the same month last year, when the figures were 3,807,561 pounds. The exports for the first eight months of this year were 94,449,662 pounds, as compared with 110,022,734 pounds for the same period last year. Although there was not as much exported this year as last, the value of the oil was greater. The oil exported in the eight months this year was worth $18,060,272, as compared with a valuation of $14,861,973 for the

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oil exported during the same period in 1917.

Chicago Cottonseed Oil.

Chicago, Sept. 26, 1918.

There was good demand for prime crude cottonseed oil at the government fixed price of 17½c. in Chicago during the last week, with a fairly good business being reported. An advance of 1@1½c. was noted in the market for deodorized white cottonseed oil, the figures this week being around 21½c., as against 20c., which was quoted by most dealers last week. The latter figure still stood for prime summer bleachable in barrels, while from $19.25 to $19.34 were the figures quoted most frequently for summer yellow soap grade in sellers' tanks, most dealers favoring figures near to the former quotation. Single carload lots of dark cottonseed oil, Pacific coast, were still offered at 15c. in barrels by one dealer.

Telegrams from Crude Oil Centers.

ATLANTA, GA., SEPTEMBER 27, 1918.

Crue mills are so handicapped by power and labor shortage that very little oil is selling. Meal offerings are light for the same reason, but demand for both articles is good. All offerings are taken promptly at established prices.

OTHER VEGETABLE OILS.

CASTOR OIL.—See drug market.

CHINA WOOD OIL.—There is a rather peculiar situation in this market that is in part the result of overspeculation. Oil is being offered for prompt shipment from the Pacific coast at 25½c. a pound, and yet leading importers say that they would not offer it less than 27c. "Someone is losing a lot of money," remarked one of the best-posted men in the trade. Some time ago there was a lot of buying on speculation, and finally consumers began to remain out of the market, and the result has been that some people had China wood oil on their hands who had no use for it, and this speculatively held oil is now coming on the market at concessions. There is no weakness in the general market, however, but, on the other hand, offers from the Orient are on a higher basis and as high as 31 cents is being asked for deferred shipments. The high price of silver and the high rate of exchange make for higher prices in the producing country, and it looks as if China wood oil would be higher next year than this. It is not probable that there will be the speculation in it that there has been, however, for it has been proven that consumers can and will check an advance by remaining out of the market any time they think that the price is being manipulated There is not a very active spot demand, but what is changing hands in New York on the spot is selling at 30 cents.

Chicago, Sept. 26, 1918.

Sales of China wood oil at 25½c. in sellers' tanks and barrels, November-December, from coast were reported on the Chicago market this week. Other sales of Hankow, Pacific coast, forward shipment in barrels, were reported at 25¼c., with good inquiry at the price. Some few offerings were said to be available at 25½c. by the same firm. Spot barrels, Chicago basis, were offered at 29c. Some dealers declare that there is a serious question as to supplies. The tone of the market has been decidedly firm, probably due to continued cables concerning interior troubles in China.

COPRA.—The tendency of copra holders is to wait for advances to be made by buyers, rather than to make offers in a market that is firmer than last week. Recent reports are to the effect that Moluccus and Macassar speculators are holding 1,500,000 piculs of copra (picul equals 133 1-3 lbs. av.) for shipment after the war. British consular reports show these exportation figures for the three years, 1915-16-17:—37,254 tons, 43,772 tons and 32,944 tons, respectively.

Market prices—remaining about what they were last week—are:—Spot prices, 9½@9¾cv. for the South Sea Island variety. Sellers at the coast are offering at 8¾c. per pound.

Chicago, Sept. 26, 1918.

The Chicago copra market showed renewed activity this week, some business being reported at 8½c., Pacific coast, for South Sea sun dried. It was said here that Pacific coast holders claim to have made deals at higher prices, but these reports have not been confirmed. Considerable interest is being displayed with reference to forward shipments.

COCOANUT OIL.—The cocoanut oil market is firming up rapidly. Offerings continue to be more free, with leading factors maintaining prices; there are resale offers at concessions. For the Ceylon grades sales have been as low as 17¼c. per pound, from store; factors are asking 17½@17¾c. In sellers' tanks there are offers of cochin oil at 18¼@18¾c., for domestic; in barrels, 19@19½c. Manila oil is quoted at 15⅝c. per pound in sellers' tanks in round lots for shipment from the coast, while 16@16¼c. is asked for spot stocks.

Chicago, Sept. 26, 1918.

What looks like the initial phase of an advance in cocoanut oil prices is apparent in that market in Chicago this week. There was a heavy demand, and, according to most dealers, considerable business was transacted. Sales were reported of Manila 5 acid cocoanut oil in sellers' tanks at 15⅝c. and in buyers' tanks at 15¼c. The domestic market hung around 15c. for buyers' tanks and 15½c. for sellers' tanks. One firm reported heavy sales during the past week for October-March shipments for both Manila and domestic Ceylon grades. They quoted 750 tons Manila, January-March, from Manila at 16c. in sellers' tanks and sellers' tanks of domestic Ceylon, October-December, at 15½c. One of the reasons for the renewed activity in this market and the possibility of a sustained advance is said to be the fact that butter is ranging around 60@61c. in price. As a result there has been developed a much larger demand for oleomargarine, and consequently for cocoanut oil, for it so happens that fully 50 per cent. of the manufacturers of oleomargarine use cocoanut oil.

CORN OIL.—The corn oil market continues dull and uninteresting; corn oil refiners are making offers only in tins, refusing to quote in barrels. Prices remain unchanged, and are 18@18¼c. per pound for the crude in barrels on the spot, and $21.47@21.67 per pound for the refined in barrels. A telegram received from an independent offered a large quantity of refined at 21c.

Chicago, Sept. 26, 1918.

Greater activity was the characteristic of the corn oil market in Chicago this week, but there was little actual trading. Nominal quotations ranged from 14¾c. to 16c., with no actual sales reported later than last week, when it was declared that 7 per cent. acid corn oil had been sold at 16c., f. o. b. shipping point, in buyers' tanks, October shipment. Quotations this week on No. 2 corn oil still remained around 15¼c.

COCOANUT OIL CAKE AND MEAL.—There is nothing of importance to report in this market, quiet conditions prevailing. Cake is quoted at $39@41; meal, $40@42.

KAPOK SEED OIL.—The market continues featureless and consumers are seeking small quantities only. Offers are quoted at 19¼c. per pound, f. o. b. Indianapolis.

LUMBANG OIL.—The market continues listless, and only small sales are reported on the basis of $1.60 per gallon at Indianapolis.

HEMPSEED OIL.—There are some small stocks of hempseed oil available for spot consumption at 24c. per pound; prompt shipments from the coast are quoted at 18c. per pound in barrels.

Chicago, Sept. 26, 1918.

Sales were reported in Chicago this week of hemp seed oil at 18c. in barrels and sellers' tanks, October, from Pacific coast. Renewed activity was noticeable, with prospects of increased trade in the near future.

OLIVE OIL.—The olive oil market is dull, and supplies are scant. Preference in the transactions is given regular customers. Prices for the denatured on the spot are $4.25 and $4.50 per gallon.

Chicago, Sept. 26, 1918.

Pure olive oil was declared to be practically unobtainable in the Chicago market this week. It was said that most of the quotations current were for adulterated products, and even trading in these stocks was limited by the holders to caring for their regular trade at figures ranging from $4.25 to $4.50 in barrels, New York delivery. Scarcity of supplies is said to be keeping the market in a firm position.

PALM OIL:—

Chicago, Sept. 26, 1918.

No transactions were reported in the palm oil market in Chicago this week. Except for some limited resale offerings there was not much in the way of quotations. The New York basis price of 37c. per pound in barrels on oil from which glycerine had been ex- 60c. on resales of genuine Lagos, Western tracted was still heard. Last week's figure of point, was the only other figure heard.

PALM KERNEL OIL.—The palm kernel oil market is showing more life this week, and shows an upward tendency. Some small quantities are reported at 19@19¼c. per pound.

Chicago, Sept. 26, 1918.

Dealers absolutely declined to make quotations on palm kernel oil here this week. The only figures they had heard of were those being quoted in New York of 18@18½c. per pound.

PEANUT OIL.—The peanut oil market is exceedingly dull. Domestic refined has slumped to 20½@21½c. for the oil on the spot in barrels; edible quality, 21@21½c. per pound on the spot in barrels; the Oriental grade in sellers' tanks remains at 18@18¼c. per pound at the coast.

Chicago, Sept. 26, 1918.

Sales of Oriental peanut oil were reported on the Chicago market this week at 18c. for buyer's tanks and 18⅜c. for seller's tanks, coast, September and October. However, this market was not particularly active, and the quotation range remained about the same as last week. In domestic peanut oil there were some transactions at $1.36, Southern mills, the figure which prevailed in the quotations of last week. The fact that the new crop is just coming in appeared to be the interesting factor in the situation. Deodorized white peanut oil was quoted around 21¼c.

PERILLA OIL—The perilla oil market continues unchanged; prices are 23@25c. per pound in barrels on the spot.

It is estimated that the average annual crop of perilla seed is 1,000,000 kin (1,330,000 poundds).

Chicago, Sept. 26, 1918.

Dealers in the Chicago market were still looking for supplies of perilla oil, which, however, were not forthcoming. The old price of 20½c., Pacific coast, in barrels, is still being quoted.

POPPYSEED OIL—This market continues tranquil, with the price of $5 per gallon at New York in effect.

RAPESEED OIL—Advances in prices marked this week's transactions in this market. There is a little more demand for all but the French grade. Refined is quoted at $1.80@1.85 per gallon; blown oil, $1.90@2, in barrels on the spot. No offers for French oil are reported.

Chicago, Sept. 26, 1918.

Nominal quotations for rapeseed oil on the Chicago market continued to range around 20¼c. for seller's tanks, with no actual transactions being reported. The quotations are about the same as last week.

SOYA BEAN OIL.—The Soya bean oil market continues to have a strong undertone, although trading could not be termed brisk. The spot demand is light, but interest is displayed in fu-

ture business, and sales are reported daily. Quotations are 15⅞c. to 16¼c. in sellers' tanks, f. o. b. coast. October is quoted at 16@16⅛c. and spot at 15⅞@16⅛c.

The price of extracted soya bean oil in bulk per hundredweight at Hull for the past week follows:—

	s.	d.
Saturday	60	0
Monday	60	0
Tuesday	60	0
Wednesday	60	0
Thursday	60	0
Friday	60	0

Chicago, Sept. 26, 1918.

The soya bean oil market in Chicago this week was not so active so far as transactions go, but there was quite extensive interest in the commodity. Quotations were 15¼@15⅝c. for nearby stuff. Forward stocks were well held at from 16c. up. Pacific coast delivery, while spot barrels continued to be offered at 17c. The continued large inquiry for forward shipments is still the feature of the market. General anticipation is indulged in that the market will go considerably higher before many weeks.

TEA OIL.—Interest in tea oil continues, with its use as a substitute growing daily. Slight advances featured the market this week; prices are 23@24c. per pound.

WALNUT OIL.—The walnut oil market continues inactive, high prices and limitation of output operating to prevent extensive use. The present market price is $3 a gallon.

FATTY ACIDS.—There is nothing active about the fatty acid market this week. The quotations follow:—Soya bean oil fatty acids 15@15⅝c. per pound; corn oil fatty acids, 12@15c. per pound (depending upon grades); cocoanut oil fatty acids, 15@15½c., and rapeseed oil fatty acids, 15c. per pound.

Chicago, Sept. 26, 1918.

Only inconsequential changes were recorded in the Chicago fatty acids market this week, though the tone was firm because of an active demand coupled with the anticipations of traders that conditions are about to improve. Cottonseed oil fatty acids quotations ranged from 14½c. to 14⅝c. f. o. b. factory, in barrels, delivered, which was the same as last week. In the soya bean fatty acids market quotations were from 14c. to 15c. for the commodity in barrels or seller's tanks f. o. b. factory, although there was no actual business reported. The range continued around 14¼@14⅝c. for No. 1 corn oil fatty acids, while for No. 2 the price was 11½c. f. o. b. factory. Linseed oil fatty acids still continued to be quoted at about 18½c. f. o. b. factory, with the proposal to deliver the commodity in barrels at $1.13 still standing. The range for cocoanut oil fatty acids, dark, was around 12½c. f. o. b. Chicago in seller's tanks or barrels. For cocoanut oil fatty acids, light, the price was still 16⅝c. f. o. b. factory. One dealer quoted a medium light cocoanut oil fatty acid at 15c. in seller's tanks or barrels, f. o. b. factory. Sardine oil fatty acids were still being quoted at 13½c. delivered, while for whale oil fatty acids the price was still around 10⅝c. Atlantic seaport.

GREASES, LARD, STEARINES AND TALLOW.

Greases,

The market in greases continues strong and prices show an upward tendency. Offerings are light and there is a firm undertone. A requisition for a million pounds of lubricating grease which was filed by the government was later cancelled, as ample supplies were discovered at its depots.

Brown grease is quoted at 16@16¼c.; house at 16¾@17c.; light bone at 17¾@18c.; white, 19¾@20½c.; yellow, 17½@17¾c.

Coastwise shipments received at New York during the week include 25 bbls. and 1 car.

Chicago, Sept. 26, 1918.

The edge appeared to have been taken off the grease market this week, although it continued firm, with good demand for most of the lines. Sales were reported on choice white grease at 19¾c., and the quotation range continued from 19¾c. to 20c., the same as last week. Ordinary grades continued to be in good demand. Some buyers still insisted that lower prices will shortly prevail in this market.

The prevailing quotations, all f.o.b. Chicago, carload lots, are, per pound, as follows:—Pigsfoot grease, 20@21c.; choice white grease, 20@20¼c.; "A" white grease, 19½@19¾c.; "B" white grease, 17½@17¾c.; cracklings, 16½@17c.; bone naphtha grease, 12½@13c.; yellow grease, 16@16¼c.; brown grease, 14@15c.; house grease, 15½@15¾c.; garbage grease, 13c. loose.

LARD.

The lard market continues steady in tone. The offerings are not of sufficient quantity to change values. City steamed lard continues at 27c., neutral at 30 and 31c., and compound at 22½ and 23¾c.

The Bureau of Food and Domestic Commerce, reports exports of 404,515,493 pounds of lard, with a total value of $104,845,817, for the first eight months of the year, as against 297,126,008 pounds, with a total value of $57,463,694, for a like period last year. Neutral lard exportations were 5,966,759 pounds, with a total value of $1,511,556, for the first eight months of 1918, as against 9,087 640 pounds, valued at $1,922,794 for a similar period in 1917.

Coastwise shipments received at New York during the week included 798 tcs., 3 cars and 1,405 cases.

Chicago, Sept. 26, 1918.

Lard prices stayed around $26.85 this week in consonance with the falling off in the price of hogs, the top of which at $19.85 was $1.25 a hundred lower than last week. Hog receipts at the principal Western markets today were 65,100, as against 58,000 a week ago, and 39,000 one year ago today. For the week so far the receipts have been 176,100, as against 181,000 for the same period last week, and 120,000 for the same period last year.

A moderate speculative trade occurred in lard today and the market displayed rather an easy undertone. Offerings fair from miscellaneous sources and the demand was very moderate. The foreign situation was little changed, though stocks on the other side are said to be enlarging.

The middle of the month report on Chicago lard stock showed an increase in stocks of new lard over those of August 31 last, though, of course, considerably less than were on hand on September 14, of 1917. The table follows:—

	Sept. 14, 1918. Pounds.	Aug. 31, 1918. Pounds.	Sept. 14, 1917. Pounds.
New lard	17,770,114	16,096,402	43,473,020
Old lard	182,884	670,356	.....
Other kinds	22,272,060	17,958.191	7,785,828

Exports for week ending September 14, 1918, 4,900 tcs.

Exports for corresponding week last year, 8,200 tcs.

STEARINES.

The market in stearines maintains its firmness. Stocks of oleo stearine are reported to be well cleaned up. Prices are higher for prompt deliveries than for futures. Lard stearines range from 29c. to 29¼c., and oleo stearines, 22½c. to 23c.

Chicago, Sept. 26, 1918.

With buyers hoping for lower prices, there was an advance in prime oleo stearines this week of approximately 1c., with slight increases in several of the other commodities in this market. The range for prime oleo stearines was from 22¼c. to 22½c., with sales being reported at the former figure.

The prevailing quotations, all f. o. b. Chicago, in carload lots, are, per pound, as follows:—Prime oleo stearine, 22¼@22½c.; tallow stearine, 20¾@21c.; "A" white grease stearine 20¼@20½c.; "B" white grease stearine, 18¼@19c.; yellow grease stearine, 17@17¼c.; T. P. stearic acid, 24c.; D. P. stearic acid, 22@23¼c.; extra oleo oil, 27c.; No. 2 oleo oil, 26c.; oleo stock, 22½@23c.; lard stearine, 27½@28c.

TALLOW.

There has been a slight advance in prices in this market during the week. All grades are firm. Special loose is quoted at 19@19½c.; loose city prime, 18¾@19¼c.; edible, 20½@21½c.

Coastwise shipments received at New York during the week include 1,230 casks.

Chicago, Sept. 26, 1918.

Prime packers' tallow sold on the Chicago market this week at 19¾c., with 19½c. bid. The quotations, however, ranged from 19¾c. to 20c. Edible tallow sold at 20½c., with 20¾c. bid and producers asking 21c. The market is anywhere from 20¼c. to 20¾c.

The prevailing quotations, f. o. b. Chicago, in carload lots, are, per pound, as follows:—Edible tallow, 20¼@20½c.; city fancy tallow, 20@20¼c.; prime packers' tallow 19¾@20c.; No 1 packers' tallow, 18¼@18½c.; No. 2 packers' tallow, 15½@15¾c.; No. 1 renderers' tallow, 18½@18¾c.; choice country tallow, 19¼@19¾c.; No. 1 country tallow, 18¼@18½c.; "B" country tallow, 17@17¼c.; No. 2 country tallow, 15¼@16c.

ANIMAL OILS.

The restriction by the government of the sales of degras continues to be the principal topic for discussion in the animal oil market. All orders have to receive the O. K. of the government, and proof of its need for war purposes must be furnished. An order for half a carload was held up for a short time this week, pending establishment of proof of its use as a war essential.

DEGRAS—The degras market has become unusually quiet since the restrictions have been in vogue. Prices for American, English and neutral continue nominal. A sale of American degras at 23c. per pound was reported.

Chicago, Sept. 26, 1918.

The degras market continued to be an uninteresting affair in Chicago again this week. Traders said decidedly short stocks continued to rule, and that the only quotation available was that of 23@26½c. per pound, which was announced several weeks ago.

HORSE OIL.—Conditions in the horse oil market continue dull. Buyers are few, and prices remain about what they were last week, 16½@17c.

Chicago, Sept. 26, 1918.

Inactivity again characterized the horse oil market in Chicago, the most recent range quoted being that of 16½@17c. per pound.

LARD OIL—Lard oil market conditions are uninteresting. Prices continue steady, marked by a good undertone. Prime edible is quoted at $2.25@2.30 a gallon; prime nonedible, $1.85@1.88; off-prime, $1.72@1.76; extra No. 1, $1.65@1.68; No. 1, $1.50@1.55; No. 2, $1.45@1.50.

Coastwise shipments received at New York during the week include 20 barrels.

Chicago, Sept. 26, 1918.

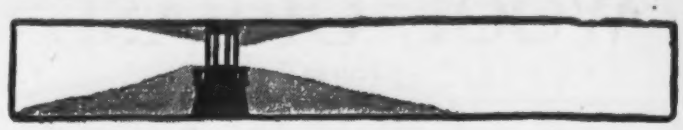
The lard oil market remained about the same as has been the case for several weeks, quotations on No. 1 being still around $1.38 in sellers' tanks, f. o. b. delivery point, while for No. 2 the price was $1.36 under the same conditions. Prime winter edible was quoted at $2.25, while for non-edible the price of $2 was the prevailing figure, with practically no activity in either market.

NEATSFOOT OIL.—There seems to be no demand for forward delivery in this market, while the undertone is good. Deliveries have been prompt on contracts already in hand and interest has been shown in future deliveries. The 20-degree cold test is quoted at $3.45@3.50, 30-degree at $3@3.05, 40-degree at $2.95@3.

Chicago, Sept. 26, 1918.

Pure neatsfoot oil was quoted on the Chicago market this week at from $2.40 to $2.60 per gallon, f. o. b. Chicago. Inactivity, which has been the predominant feature for several weeks, still continued to characterize it.

OLEO OIL.—The oleo oil market continues inactive, prices holding, with no change over last week's figures. It



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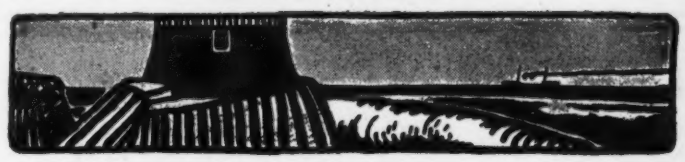

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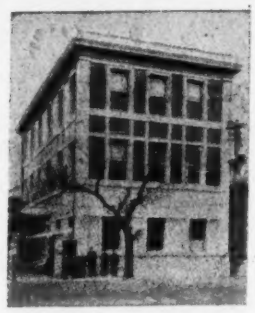

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Chicago, Sept. 26, 1918.

Considerable advances were registered in the oleo oil market quotations this week. Extra oleo was quoted at 27c. per pound, as against 25½c. per pound last week, with No. 2 oleo oil at 26c. as against 24½c. the past week, and oleo stock at from 22½c. to 23c.

RED OIL.—The red oil market is marked by firm prices. Trading is dull. Prices are 17¼@17½c. per pound.

Chicago, Sept. 26, 1918.

There is no particular activity in the red oil market so far as Western consumers' channels were concerned. More interest was shown in this market in the East. Quotations ranged from 15½c. to 16½c. for saponified, dependent upon quality and production point, while for distilled, the range was from 16¾c. to 17c., the same as last week.

STEARIC ACID.—The stearic acid market is firming up. The government, in fixing the price of glycerine, has produced a stabilizing condition. Single pressed is quoted at 23½@24½c. per pound, double pressed at 24½@25c. and triple pressed at 26@26½c.

Chicago, Sept. 26, 1918.

Stearic acid quotations in Chicago this week remained about the same as they were last week, triple pressed stearic acid being quoted at 24c., double pressed at from 22c. to 23½c., and prime stearic acid around 22c.

TALLOW OIL.—Quiet market conditions prevail, and the week has uncovered no special activity. Acidless tallow oil is quoted at $1.58@1.60 per gallon.

FISH OILS.

The fish oil market is firm, with scanty stocks reported. The British Government has requisitioned a large quantity of cod oil, buying direct from Newfoundland. Producers are holding for higher prices on account of this demand.

COD OIL.—It is almost impossible to secure cod oil on account of the government requisitioning. Prices, more or less nominal, are $1.45 for barrels f. o. b. Boston, while the spot price is generally accepted at $1.50 per gallon; prime domestic oil, $1.40@1.43 per gallon, and the Japanese $1.20@1.22.

Chicago, Sept. 26, 1918.

A quiet market in cod oils was the rule again this week in Chicago, for the reason that limited stocks precluded activity. Cod and halibut mixed was still quoted at $1.05 coast and codliver oil at $1.41 per gallon in barrels.

DOGFISH OIL:—

Chicago, Sept. 26, 1918.

There was no change in the situation with reference to the dogfish oil market in Chicago, the old prices prevailing. These were 90c. for a dark oil, f. o. b. Seattle, and for dogfish liver oil from $1.08 to $1.10, in sellers' tanks, f. o. b. coast.

HERRING OIL:—

Chicago, Sept. 26, 1918.

Oriental herring oil was offered on the local market at $1.20 per gallon, sellers' tanks, coast, October and November, but limited business was the rule. The most remarkable feature of the market was the fact that the quotation prices had been increased 8c. The tone of the market remained firm.

MENHADEN.—The menhaden oil market has been quiet this week; most of the producers are holding out for higher prices, and buyers are not interested apparently.

Light pressed is now held by dealers at $1.43@1.44 per gallon; yellow bleached at $1.44@1.47; white bleached is $1.47@1.48 per gallon on the spot in barrels. Southern and Northern crudes are quoted at $1.24@1.25 per gallon at the works.

Chicago, Sept. 26, 1918.

There was no activity in the local menhaden market, the old quotations still standing. These were $1.23 Eastern factory for crude menhaden oil, and for refined menhaden around $1.40 for prssed in barrels and $1.36 for pressed in sellers' tanks, f. o. b. coast.

PORPOISE JAW OIL.—Dull conditions continue to prevail in this market; stocks are scanty and the demand has not increased. Prices are quoted at $20@22 per gallon. The body oil is nominal entirely.

Chicago, Sept. 26, 1918.

Negligible demand with small stocks and the price level of $20 per gallon held firm, characterized the porpoise jaw oil market in Chicago this week. No actual trading has been reported for some time.

SALMON OIL:—

Chicago, Sept. 26, 1918.

Salmon oil was quoted at $1.25 per gallon in sellers' tanks on the local market this week, with demand good, though trades were limited.

SARDINE OIL:—

Chicago, Sept. 26, 1918.

Sales of No. 1 domestic sardine oil were reported in Chicago this week at $1.20 per gallon, seleris' tanks. This is an increase of 7½c. over the sale price reported last week.

SHARK OIL:—

Chicago, Sept. 26, 1918.

The general condition of the shark oil market in Chicago remained the same as has prevailed for several weeks, no new quotations being available. The only figure quoted here is $1.92 for the commodity n barrels, f. o. b. coast.

SPERM OIL.—The sperm oil market continues inactive, and little trading is reported; stable conditions prevail. Spot goods are quoted at:—Bleached, 38-degree cold test, $2.23@2.25 per gallon; 45-degree, $2.18@2.20; natural grades, $2.20@2.22 for the 38-degree acid test, and $2.15@2.17 per gallon for the 45-degree.

Chicago, Sept. 26, 1918.

There have been no price changes in the sperm oil market this week, according to dealers, who claim that the market is about as quiet as usual, with the tone for all grades being firm.

WHALE OIL.—Sales of whale oil continue small in volume in a dull market, with a steady undertone, based on the existing limited stocks. Quotations are nominal for all grades, as follows:—No. 1 crude, $1.35 per gallon; No. 2, $1.23; No. 3, $1.15; natural winter, $1.50; bleached winter, $1.53.

Chicago, Sept. 26, 1918.

No. 1 whale oil was quoted on the Chicago market at 16½c. per pound in sellers' tanks, with the price of No. 3 fixed at $1.15 per gallon, f. o. b. coast in small lots. No actual sales were reported in any quarter.

JAPAN OIL MARKET.

Tokio, Japan, Aug. 19, 1918.

CASTOR OIL—Is on the down grade again, as the foreign drain started on its stock here is known to have been limited. It is quoted at 62 yen per picul.

COCONUT OIL.—On the approach of the fall buying season inquiries are received from Europe and the United States by coconut oil men here. Even Russia has sent a few inquiries to Tokio exporters. In these circumstances the market for this oil has got markedly harder and export quotations are on the up grade. The ruling price is 33 yen per picul.

COPRA—Is comparatively well stocked in Japan now. A holder in Tokio reports that his stock runs into 1,000 tons or more. On account of a better prospect for coconut oil, copra is in a more active mood. The export quotations range between 14.60 yen and 14.70 yen per picul.

COLZA OIL—Has maintained its soaring tendency since last report, although it is often marked with immobility. Even dealers admit the ruling prices to be rather too high, and under that impression they cautiously handle business. The standard price in Tokio has reached 22 yen per case. The supplies remain small, as oil millers have secured little of rapeseed since last report. Rapeseed producers and holders speculatively hold their cargo in view of the swift advance in oil prices.

LINSEED OIL—Has no standard quotation here, and business is closed only at seller's figures. This oil is almost out of stock.

PEANUT OIL—Is being in season soon and inquiries are to hand from Europe and America. It is hoped by Japanese millers that with the easier supply of space this fall's business with America will be brisk. Prices here have advanced somewhat, again offers being made at 43 yen per picul.

SESAME OIL—Is in comparatively small request at present, partly because of it being now out of season and partly on account of its high prices, but speculative buyers show themselves ready to cover reasonable offers. Prices are accordingly advancing, and in view of the slack arrival of sesame seeds and the boom in colza oil, it is believed that their booming tendency will be maintained for the time being. Tokio exporters offer this oil at 26.50 yen per case, against 25 yen per case last reported.

SOYA BEAN OIL—Is advancing still, owing to the increasing consumption at home and the heavy foreign drain on the supplies. Tokio exporters offer this oil at 19 yen per case now which figure is an increase of 1 yen per case over last week. An oil mill owned by Suzuki & Co. has been burned down by rioters in the recent hunger uprisings in this country, and it is believed that the output of this oil will decrease pending its restoration, but the market has felt very little the effect of this event.

WOOD OIL—Shows an extremely strong tone, and its market has no standard price. The stock of this oil has almost gone out, causing dealers to retain whatever cargo they hold, instead of parting with it.

(In reading this report the following values and weights will be found of assistance:—Koku, 4.765 gallons; picul, 133⅓ pounds; kwan, 8.2673 pounds; kin, 1.3227 pounds; yen (100 sen), $0.4984.)

Cottonseed Yield and Seed Prices in Oklahoma Changed by U. S. Food Administration.

Washington, Sept. 28, 1918.

A special committee representing the Oklahoma crushers, composed of W. F. Pendleton, R. K. Wootten and R. A. Vose, together with State Food Administrator Ames, visited the United States Food Administration in Washington last week and succeeded in proving that the oil yield basis announced for that State last week was too high and that sufficient allowance had not been made in the $18.50 spread for increased working cost in that State this year. The Oklahoma spread was accordingly increased to $19.50, the same as Texas, and the oil yields were reduced by one gallon in each of the two zones in the State. As readjusted the basic yields and spread, with unchanged product prices, make seed prices in the two zones $66.50 and $64.50, respectively, a reduction of $2.50 a ton.

ROSIN CONDITIONS

Presented to Paint and Pigment Section of War Industries Board.

Washington, Sept. 28, 1918.

A statement of the stores of rosin and the run of productions was made this week to the Paint and Pigment Section of the War Industries Board by the War Service Committee for the industry. General conditions within the trade were frankly discussed and suggestions made for placing the naval stores industry on a basis that will encourage the producers to remain in business. It was admitted by the Federal officials that the naval stores people during the last two years have had a harder fight for existence than almost any other industry. The Federal officials have promised the trade co-operation in improving the opportunities for the naval stores production and consumption in this country. Representatives of the Pulp and Paper Section attended the conferences.

The industry was represented by J. A. G. Carson, Carl F. Sper, W. F. Coachman and J. C. Nash.

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OIL FROM FRUIT PITS MAY BECOME NEW INDUSTRY HERE AS RESULT OF WAR

Wahington, Sept. 28, 1918.

The hard necessity of war which forced Germany to enter a certain branch of oil-producing now promises to point the way to a permanent industry which not only will thrive in the European country after the war, but in this country as well.

It has already become known that the Germans were making a practice of gathering in every cherry pit and peach pit that could be found in their realm, with the object of extracting the oil. It is now learned through publications which have been received by the United States War Trade Board that the results have been so satisfactory that the producers are convinced they will have no occasion to cease their activities when normal trade channels are opened again. Former neglected materials are now the source of all the salad oil and table oils that the Germans are able to obtain, and it is stated in their publications that the business has been profitable.

Before the war the Teutonic country imported practically all this class of oil that it consumed, relying principally on cottonseed and olive oil. In the last few years they have been compelled to turn to new sources. These are fruit stones—cherry, peach and plum—sunflower seeds, of which the production has been increased, beech nuts and horse chestnuts. They are also growing some oil-bearing seeds such as hemp, rape and mustard.

It is the results from the fruit stones that have attracted particular attention, and the discussions of the subject that have appeared in their press have caused experts on this side of the water to believe that these sources eventually will be drawn upon permanently here to increase the oil supply of the United States. The process is not expensive, and the operation may be carried out in a manner which resembles that used in the production of cottonseed oil.

COPRA IN JAVA.

Prices Moved Upward During First Three Months of 1918.

London, Sept. 8, 1918.

A review of Javan trade in the first three months of 1918 says of copra the market was generally firm, and prices moved upwards. Java F.M.S. was offered early January at 14 florins per picul f. o. b., January-February delivery, while there were buyers for Makasser sun-dried at 13 fl. per p., f. o. b. These prices rose in the second half of the month respectively to 14.50 and 13.50. In February the market was very strong, and Java F.M.S. made 15.75 fl. per picul, f. o. b. Priok, February and March delivery. About the end of the month "mixed" was offered at 13.50 fl., and telquel at 11.75 fl. per picul, f. o. b. Priok. A small parcel of the last-named quality was dealt in for shipment to Scandinavia. In March, too, the copra market held well; but, in view of the uncertain political situation, export business was unimportant. Java F.M.S. was offered at 16.50 fl. per picul, f. o. b. Priok, and at 16 fl. free at sellers' stores. The demand in Soerabaya by the oil makers was very strong, and considerable business was done at 16-7 fl. per picul for sun-dried copra. The export of copra from Java and Maadoera in the first quarter of 1918-17 is given as follows, the unit being 1,000 kilos, and the 1917 figures being distinguished by parenthesis:—Holland (5,389), —; England, (1,039), —; United States (2,503), 1,244; Japan and others (7), 447. The coconut oil market, like that of copra, was very firm. About end of January some export business took place at 26.50 fl. per picul, f. o. b. Pontianak, while for one small parcel, delivered Soerabaya, 27.50 fl. was paid. Early in February, when Japan came on the market, the export inquiry became active. Pontianak oil for February-March delivery was sold at 25.50 fl. per picul; while one parcel guaranteed 3 per cent. fatty acids found buyers at 31 fl. free Batavia. Later Pontianak oil, guaranteed maximum 4 per cent. free fatty acids, was placed at 28 fl., free Pontianak; and this oil, guaranteed maximum 3 per cent. free, f. a., was offered at 30.75 fl., in tins and cases free, Tandjong Priok. The market held on very strong; then through lack of freightage, particularly for Japan, the sale was limited. Early March there were sellers on the Soerabaya market at 32.50 fl. for oil guaranteed 3 per cent. free fatty acids, and at 29 fl. for second quality. Towards the end of the month May, June and July delivery was offered at 31 fl., f. o. b. Pontianak, in tins, without cases, which was a very high price, particularly where no export business was done for want of ships. The export of coconut oil from Java in the first quarter of 1918 and 1917 was as follows, the unit being 1,000 liters:—England (40), nil; United States (6,137), 4,964; Japan (844), 2,220; other countries (175), 2.

Paint and Oil Club of New England Elects Officers for Ensuing Year.

The 35th annual meeting and the 249th dinner of the Paint and Oil Club of New England was held at the Parker House, Boston, Thursday evening, September 26. There was a reception at 5 o'clock p. m., and dinner was served at 5.30. President Herbert F. Staples presided. The business meeting opened with the reading of the records by Secretary Fred L. Moses.

The committee to nominate officers for the ensuing year reported the following, who were unanimously elected:—

President, March G. Bennett, Boston; vice-president, Harry A. Hall, Boston; secretary-treasurer, Fred L. Moses, Boston; directors, Geo. H. Kimball, of Wadsworth-Howland Company; Boston; Wm. D. Wade, of the Chadwick-Boston Lead Company, Boston; Wm. G. Soule, of the Pittsburg Plate Glass Company, Boston; J. R. Stout, Sherwin-Williams Company, Boston; J. L. Hall, Spencer-Kellogg Company, Boston; H. J. Greene, Oliver Johnson Company, Providence; N. B. Fobes, Burgess-Fobes Co., Portland, Me.; delegate to the Massachusetts State Board Trade, Edw. C. Street, of Wilhelm-Dexter Company, Boston.

Rosin and Turpentine from Indian Salai Tree.

London, Sept. 5, 1918.

The administrative report of the Forest Circles in the Bombay Presidency, including Sind (India) states that the products obtainable from the salai tree in the shape of rosin and turpentine have been favorably reported on for commercial purposes, as the tree is extremely abundant in the Satpuras, and is favorably situated for exploitation. There is a prospect of the future establishment of an important industry in its products—at any rate, in the official view.

POTASH DEVELOPMENT.

Nebraska Producers Urge Senate to Retain Protective Clause in War Revenue Bill.

Washington, Sept. 28, 1918.

The importance of retaining the so-called depletion clause in the war revenue bill, with the amortization of capital invested in the production of potash in this country, now in the war revenue bill, was emphasized before the Senate Finance Committee by George A. Lee, speaking for producers of potash in Nebraska. He said the clause was satisfactory to the producers, and that he wished to impress upon the Senators the necessity of keeping it in the bill as it becomes law so as to encourage production of potash.

He told the committee that the Germans are declaring that when it comes to making peace, the question of potash is going to be an important factor, Germany having had a monopoly in the potash trade in the past. Mr. Lee insisted that production of potash in this country could be developed so as to make it entirely possible to do without the German potash in the future. He pointed out that since the war with Germany began, this country, the State of Nebraska, is producing 60 to 80 per cent. of the potash supply of the country. He said it would produce about 60,000 tons this year.

He estimated that the potash lakes in Nebraska were good for the next fifteen years. Potash deposits, however, exist in many other parts of the country, particularly in Utah and California. Much of this potash is found in rock form, and must be manufactured at considerable cost.

St. Louis Paint, Oil and Varnish Club Elects N. P., O. and V. A. Convention Delegates.

St. Louis, Mo., Sept. 26, 1918.

The following delegates and alternates have been named to represent the St. Louis Paint, Oil and Varnish Club at the annual convention of the National Paint, Oil and Varnish Club in Boston next month:—

Delegates—J. P. Thomy, Campbell Glass and Paint Company; J. W. Bray, Condie-Bray Glass and Paint Company; H. F. Lodge, Nelson, Klein & Krausse Mfg. Company; Wm. A. Buddecke, Point Milling and Mfg. Company, Mineral Point, Mo.; H. Greene, National Lead Company.

Alternates—Geo. R. Merrell, J. S. Merrill Drug Company; E. S. Horn, Pierce Oil Corporation; J. M. Lindsley, Eberson-Lindsley Paint Company; D. D. Cummins, American Linseed Company; Wm. J. Phelan, Phelan-Faust Paint Mfg. Company.

United Drug Company Head Protests Against Tax on Non-Beverage Alcohol.

Washington, Sept. 27, 1918.

L. K. Liggett, president of the United Drug Company, recently appeared before the Senate Finance Committee, which is considering the new war revenue bill, and argued against the proposed tax on non-beverage alcohol contained in the measure as it passed the House. He explained that his company manufactures pharmaceutical preparations, drugs and medicines as well as retails them.

"We feel that the industry is having an injustice done it by having the tax on non-beverage alcohol raised from $2.20 to $4.40 a proof gallon," said Mr. Liggett.

CUSTOM APPRAISERS' DECISION.

Reappraisement has been made on crude tartar from Oreste Casignole, Milan, Italy, exported December 3, 1917, and entered at New York on January 10, 1918. File No. 94 053. Crude tartar entered at 3.75 francs per kilo, less N. D. charges. Reappraisement as entered at 82 per cent.

Frank E. Ferguson, for the last ten years assistant director of the Bureau of Engraving and Printing, has resigned to accept an executive position with the Calco Chemical Company of Bound Brook, N. J. This concern is developing color and dye works, and it is understood that Mr. Ferguson will take a special interest in that branch of the business. His resignation takes effect October 25. He will be succeeded by James M. Fisher, for 23 years in charge of the personnel work in the bureau.

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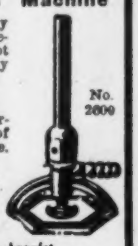

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Crude and Refined Petroleum Prices Week Ending September 28, 1918

CRUDE AT THE WELLS.

The following prices are those paid by the pipelines for crude as delivered from the wells, with a comparison for the corresponding period of 1917:—

Eastern States.

	1918.	1917.
Pennsylvania	@ bbl. $4.00	$3.50
Cabell, Pa.	2.77	2.57
Mercer, black	2.23	2.23
Corning, Ohio	2.85	2.60
Somerset, Ky.	2.60	2.40
Ragland	1.25	1.10
Wooster, Ohio	2.58	2.38
North Lima, Ohio	2.38	2.08
South Lima, Ohio	2.38	2.08
Indiana	2.28	1.98
Princeton, Ind.	2.42	2.12
Illinois	2.42	2.12
Plymouth, Ill.	2.33	2.03

Oklahoma-Kansas.

*All grades except Healdton..	2.25	2.00
Healdton, 32 deg. and above..	1.45	1.20

* Cushing oil is nearly all bought on contract.

Northwestern Louisiana.

Caddo, La., 39 deg. and above	2.25	2.00
35 to 37.9 deg.	2.15	1.90
32 to 34.9 deg.	2.10	1.85
heavy	1.55	1.60
De Soto	2.15	1.90
Crichton, light	1.75	1.40

North Texas.

Corsicana, light	2.35	2.00
heavy	1.30	1.05
Electra	2.25	2.00
Henrietta	2.25	2.00
Strawn	2.25	2.00
Thrall	2.25	2.00
Moran	2.25	2.00
Yale	2.25	2.00

Gulf Coast.

Humble	1.80	1.00
Saratoga	1.80	1.00
Sour Lake	1.80	1.00
Spindletop	1.85	1.05
Batson	1.80	1.00
Vinton	1.80	1.00
Dayton	1.80	1.00
Goose Creek	1.80	1.00
Jennings	1.80	1.00
Markham	1.80	1.00
Edgerly	1.80	1.00

Wyoming.

Grass Creek	1.85	1.70
Elk Basin	1.85	1.70
Big Muddy	1.60	1.15
Salt Creek	1.50	...
Lander, heavy crude	1.00	...

California.

Kern River, Midway-Sunset, McKittrick, Lost Hills-Belridge, Coalinga—		
14 to 17.9 deg.	1.23	.98
18 to 18.9 deg.	1.24	.99

Prices are 1c. higher per barrel for each increase in gravity of one full degree above 18 degrees to and inclusive of 24.9 degrees.

25 to 25.9 deg.	1.32	1.07

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 25 degrees.

37 to 37.9 deg.	1.57	1.32

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 37 degrees.

Ventura county—

25 to 25.9 deg.	1.32	1.07

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 18 degrees to and inclusive of 36.9 degrees.

Fullerton and Whittier and Santa Maria—

16 to 17.9 deg.	1.23	.98
18 to 18.9 deg.	1.24	.99

Prices are 1c. higher per barrel for each increase in gravity of one full degree above 18 degrees.

25 to 25.9 deg.	1.32	1.07

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 25 degrees.

37 to 37.9 deg.	1.57	1.32

Oil above 37 deg. gravity 6c. higher with increase of 3c. a barrel for each full degree above 37 deg. gravity.

MEXICAN CRUDE.

(Prices per barrel, Texas points.)

Houston	$1.90@2.15
Galveston	1.90@2.15
Port Arthur	1.90@2.15
Beaumont	1.90@2.15
Aransas	1.90@2.15
San Antonio	2.05@2.35

Mexican crude is used for fuel in ships and railroad engines, being too heavy for ordinary fuel oil purposes.

CANADA.*

Canada	2.78	2.48
Petrolia	2.58	2.28
Oil Springs	2.83	2.15

* Canada producers also receive a bounty of 52½c. a barrel from the government.

EXPORT QUOTATIONS.

Illuminating Oils.

Quotations are based on the followings quantities:—Bulk, tank steamer lots, ranging from 30,000 to 70,000 barrels, according to steamer capacity; barrels, cargo lots, about 30,000 barrels; cases, cargo lots averaging from 10,000 to 20,000 cases.

	S. W., 110 test. 1918.	1917.
Bulk, New York	8.25	5.50
Barrels, N. Y., cargo	15.50	10.35
Cases, New York	18.75	15.50

Prices for water white oil (150 test) are 1c. higher than those for standard white.

Quotations for 150 test oil are 1 cent above those for 110 test.

	Cases 110 test.
Two, five, low screw lots	18.75
3,000 to 10,000 cases	18.90
1,000 to 3,000	18.95
700 to 1,000	19.10
500 to 700	19.15
400 to 500	19.25
300 to 400	19.35
200 to 300	19.90
100 to 200	20.25
10 to 100	20.75

GASOLINE, FUEL OIL AND KEROSENE PRICES.

Prices herewith are those for the week at the centers indicated. Gasoline quotations are tank wagon by gallon; fuel oil either gallon or barrel; refined prices are gallon.

	Gasoline.	Fuel oil.	Kerosene.
Allentown, Pa.	25.2c.	10½c.	13c.
Altoona, Pa.	25.2c.	10½c.	15c.
Ardmore, Okla.	23c.	§$1.05@2.75	12c.
Ashland, Ky.	26½c.	13½c.	13½c.
Atlantic City	22½c.	....	9½c.
Baltimore	22½c.**	7¾@15½c.	**9½@16c.
Bartlesville, Okla.	21.5c.	§$1.05@2.75	10.3c.
Baton Rouge, La.	22c.	$1.40@—	....
Blackwell, Okla.	23c.	§$1.05@2.75	10c.
Boston	25½c.	10½c.	12½c.
Buffalo	23.5c.	†4¾c.	12.5c.
Camden, N. J.	22½c.	....	9½c.
Catlettsburg, Ky.	26½c.	15½c.	13½c.
Charleston, S. C.	24½c.	....	12@16½c.
Chicago	23c.	†$2.30	12c.
Cincinnati, Ohio	25½c.	....	13½c.
Cleveland, Ohio	25½c.	$2.25	13½c.
Columbus, Ohio	24½c.	....	13½c.
Covington, Ky.	25½c.	13c.	13c.
Dayton, Ohio	22c.	$2.10	13½c.
Denver	24c.	....	14c.
Detroit, Mich.	23.7c.	†$2.30@2.50	12.7c.
Dover, Del.	28.2c.	10½c.	13c.
Duluth	22c.	....	11c.
Easton, Pa.	28.2c.	10½c.	13c.
El Reno, Okla.	23c.	§$1.05@2.75	10c.
Ely, Minn.	22.9c.	....	11.9c.
Emporia, Kan.	20.6c.	§$1.05@2.75	10c.
Guthrie, Okla.	23c.	§$1.05@2.75	12c.
Harrisburg, Pa.	25.2c.	10½c.	13c.
Hibbing, Minn.	22.7c.	....	11.7c.
Hopkinsville, Ky.	27c.	14c.	14c.
Independence, Kan.	24c.	§$1.05@2.75	12c.
Indianapolis, Ind.	23c.	†$2.30	12½c.
Lexington, Ky.	26c.	12½c.	12½c.
Los Angeles	20½c.	$1.05	9½c.
Louisville, Ky.	25½c.	12½c.	12½c.
Manchester, N. H.	26c.	....	14½c.
Minneapolis	23.8c.	7½c.	12.3c.
Missouri points—			
Cape Girardeau	22.6c.	‡....	11.6c.
Caruthersville	23.1c.	‡....	12c.
Columbia	22.5c.	‡....	11c.
Jefferson City	22.5c.	‡....	11c.
Joplin	22.5c.	‡....	11c.
Kansas City	21.8c.	§$1.05@2.75	10.8c.
Springfield	22.6c.	‡....	11.8c.
St. Louis	22.2c.	‡7½c.	11.2c.

	Gasoline.	Fuel oil.	Kerosene.
New Orleans, La.	22½c.	$2.00	11½c.
New York city	24½c.	15c.	15c.
Norfolk, Va.	23c.	....	10½@16c.
Norristown, Pa.	25.2c.	10½c.	13c.
Oklahoma City, Okla.	21.5c.	§$1.05@2.75	10.5c.
Owensboro, Ky.	25½c.	12½c.	12½c.
Paducah, Ky.	25½c.	12½c.	12½c.
Philadelphia	25.2c.	10½c.	13c.
Pittsburgh	25.2c.	7½@10c.	13c.
Reading, Pa.	25.2c.	10½c.	13c.
Richmond, Va.	23c.	....	10½@16c.
San Francisco	20½c.	$1.60	9½c.
Scranton, Pa.	25.2c.	10½c.	13c.
Seattle, Wash.	21½c.	$1.62	10½c.
Sedan, Kan.	21c.	....	12c.
Shreveport, La.	23c.	$1.75	11c.
St. Paul	22c.	7½c.	11c.
Superior, Wis.	22c.	....	11c.
Tacoma, Wash.	21½c.	$1.60	10½c.
††Texas points—			
Austin and other points ...	26½c.	$1.85@1.95	15@17c.
Dallas	26c.	$2.00@2.25	14@16c.
Beaumont	26½c.	$2.10@2.35	14@16c.
Fort Worth	26c.	$2.00@2.25	14@16c.
Galveston	25½c.	$2.10@2.35	14@16c.
Houston	26½c.	$2.10@2.35	14@16c.
Jewett	26½c.	$2.00@2.25	14@16c.
Mineral Wells	27c.	....	....
San Antonio	26c.	$2.10@2.35	14@16c.
Terrell	26½c.	$2.00@2.35	14@16c.
Wichita Falls	26c.	....	....
Waco	26c.	$2.00@2.25	14@16c.
Toledo, Ohio	24½c.	7½@10c.	13½c.
Topeka, Kan.	20.7c.	§$1.05@2.75	....
Trenton, N. J.	22½c.	....	9½c.
Tulsa, Okla.	24c.	§$1.05@2.75	12c.
Virginia, Minn.	22.7c.	....	11.7c.
Washington, D. C.	22½c.	....	**10@16c.
Wilkes-Barre, Pa.	25.2c.	10½c.	13c.
Wilmington, Del.	28.2c.	10½c.	13c.
Wichita, Kan.	24c.	§$1.05@2.75	10c.

*Depending on oil, Oklahoma or Pennsylvania. †F. o b. Oklahoma. ‡All Missouri fuel oil prices based on refinery quotation plus freight rates. §Oklahoma-Kansas prices. **Low price for tank wagons, high one for wooden barrels. ††Kerosene prices are for tank wagon deliveries and in iron barrels in common point territory. In differential territory the prices are 1c. a gallon higher.

Naphthas, Gasoline, Etc.*

(In 10-gallon drums.)

	Under 100 cases. 1918.	1917.
Benzine, 58@62 deg.	..	38
Gasoline, stove	..	38¼
Naphthas—		
Auto, 68@72 deg.	..	43¼
73@76 deg.	..	47¼

	100 cases and over. 1918.	1917.
Benzine, 58@62 deg.	..	37½
Gasoline, stove	..	37¾
Naphthas—		
Auto, 68@72 deg.	..	43¼
73@76 deg.	..	47¼

Naphthas, Gasoline, Etc.*

(In cans and cases.)

	Under 100. 1918.	1917.
Benzine, 59@62 deg.	..	33¼
Gasoline, stove	..	33½
Naphthas—		
Auto, 68@72 deg.	..	39
73@76 deg.	..	42

	200-299. 1918.	1917.
Benzine, 58@62 deg.	..	33
Gasoline, stove	..	33¼
Naphthas—		
Auto, 68@72 deg.	..	38¾
73@76 deg.	..	42¾

	100-199. 1918.	1917.
Benzine, 59@62 deg.	..	32¾
Gasoline, stove	..	33
Naphthas—		
Auto, 68@72 deg.	..	38¼
73@76 deg.	..	42½

*All gasoline and naphtha prices for export withdrawn May 31.

FOREIGN QUOTATIONS.

American Refined Oil.

	London, pence.*	Liverpool, pence.*
Monday	22½	18¾
Tuesday	22½	18¾
Wednesday	22½	18¾
Thursday	22½	18¾
Friday	22½	18¾
Saturday	22½	18¾

* Quotations are on the basis of English gallons in barrels of 40 gallons capacity.

JOBBING QUOTATIONS.

	1918.	1917.
Crude oil, steel barrels	16	15
wooden barrels	22	18
Fuel oil, 28@31 deg., in barrels.	15	10½
Gas oil, 34 deg., distilled	15½	11

Deliveries are not guaranteed at these prices.

Illuminating Oils.

130 fire test, S. W., bbls.	14½	13
150 fire test, W. W., bbls.	17½	13
tank wagons	11½	9

Naphthas, Gasoline, Etc.

Motor gasoline (garages only), steel barrels	24½	24
Motor gasoline to consumers	26½	26
Naphtha, V. M. and P., deod., steel barrels	28½	28
wooden barrels	29½	26
Gasoline, gas machine	41½	41
73@76 deg., steel barrels	33½	33
wooden barrels	39½	38
70@72 deg., steel barrels	31½	31
wooden barrels	37½	35
68@70 deg., steel barrels	30½	28
wooden barrels	36½	32

PIPELINE REPORTS—EASTERN FIELDS.

Runs.

		Day. Barrels.	Sept. Barrels.
Thursday,	Sept. 19....	47,226	1,464,393
Fri.-Sat.,	" 20, 21.	173,765	1,638,158
Sunday,	" 22....	95,390	1,733,548
Monday,	" 23....	62,274	1,795,822
Tuesday,	" 24....	120,258	1,916,080
Wednesday	" 25....	114,042	2,030,722

Deliveries.

		Day. Barrels.	Sept. Barrels.
Friday,	Sept. 20....	25,272	1,059,213
Sat.-Sun.,	" 21, 22.	111,845	1,171,058
Monday,	" 23....	73,764	1,244,822
Tuesday,	" 24....	42,590	1,287,612
Wednesday,	" 25....	78,664	1,366,276
Thursday,	" 26....	44,326	1,410,602

PETROLEUM COMPANIES—STOCK AND DIVIDENDS.

Company.	Outstanding capital.	Par.	dividend. Last	record. Stock of	Payable.
Anglo-American Oil Co.	£2,000,000	£1	3s.	.....	July 16
Associated Oil Co.	$39,757,404	$100.00	$1.25 Q.	Sept. 30	Oct. 15
Atlantic Refining Co.	5,000,000	100.00	5.00 Q.	Aug. 20	Sept. 15
Allen Oil Co.	1,500,000	1.00	.....	.....	.....
Barnett Oil and Gas Co.	780,000	1.00	.03 Q.	.....	.....
Boston Wyoming Oil Co.	3,776,757	1.00	.....	.....	.....
Borne-Scrymser Co.	200,000	100.00	20.00 A.	Sept. 14	Oct. 15
Buckeye Pipeline	10,000,000	50.00	2.00	Aug. 24	Sept. 14
California Pet. Corp., pfd.	14,877,005	100.00	1.00	.....	April 1
Central Petroleum Co., pfd.	6,000,000	100.00	2.50 s. a.	Sept. 26	Oct. 1
Chalmers Oil and Gas Co., pfd..	250,000	5.00	2%	Mar. 20	April 1
Chesebrough Mfg. Co.	1,500,000	100.00	3.00 Q.	.....	.....
Cities Service Co., com.	32,122,464	100.00	50c. ex. ¼% and ¾% ex.	Aug. 31	Sept. 20
Cities Service Co., pfd.	68,116,950	100.00	½%	Oct. 15	Nov. 1
Continental Refining Co.	700,000	10.00	10 mo.	Sept. 14	Oct. 1
Continental Ref. Co., pfd.	300,000	10.00	2%	Aug. 31	Sept. 10
Continental Oil Co.	3,000,000	100.00	3.00 Q.	Sept. 14	Oct. 1
Colonial Oil Co.	250,000	100.00	50.00	Aug. 26	Sept. 10
Cosden & Co., pfd.	3,500,000	5.00	1¾%	.....	.....
Cosden & Co., com.	15,973,285	5.00	2½%	Aug. 17	Sept. 1
Crescent Pipeline Co.	3,000,000	50.00	0.75 Q.	July 15	Aug. 1
The Crown Oil Co.	1,130,000	1.00	2% mo.	Aug. 22	Sept. 16
Cumberland Pipeline Co.	1,500,000	100.00	6%	.....	.....
Eureka Pipeline Co.	5,000,000	100.00	5% Q.	June 29	July 15
Elk Basin Petroleum Co.	2,000,000	5.00	2½% Q.	Oct. 15	Nov. 1
Empire Petroleum Co.	1,500,000	5.00	.....	July 15	Aug. 1
Federal Oil Co., com.	3,200,000	5.00	2%	.....	.....
Federal Oil Co., pfd.	300,000	5.00	2% Q.	.....	.....
Galena-Signal Oil Co., com.	12,000,000	100.00	1½%	June 20	July 1
Galena-Signal Oil Co., pfd.	2,000,000	100.00	2%	Aug. 31	Sept. 30
Glenrock Oil Co.	10,000,000	10.00	.....	Aug. 31	Sept. 30
Houston Oil Co., com.	20,000,000	100.00	.....	.....	.....
Houston Oil Co., pfd.	8,947,600	100.00	3%	July 31	Aug. 1
Humble Oil and Ref. Co.	4,000,000	100.00	6%	.....	.....
Indian Refining Co., com.	3,000,000	100.00	3% Q.	Sept. 5	Sept. 16
Indian Refining Co., pfd.	3,000,000	100.00	1¾%	Sept. 5	Sept. 16
Illinois Pipeline Co.	20,000,000	100.00	8.00 s.a.	May 31	June 29
Indiana Pipeline Co.	5,000,000	50.00	2.00Q.	July 20	Aug. 15
International Petroleum Co.	£1,151,850	5.00	.....	.....	.....
Merritt Oil Corp.	$5,400,015	10.00	.....	.....	.....
Mexican Pet. Co., Ltd., com....	39,232,000	100.00	2.00 Q.	Sept. 14	Oct. 10
Mexican Pet. Co., Ltd., pfd....	12,000,000	100.00	2.00 Q.	Sept. 14	Oct. 1
Metropolitan Pet. Corp.	12,000,000	25.00	.....	.....	.....
Midwest Refining Co.	25,000,000	50.00	1.00 Q.	July 15	Aug. 1
Midwest Oil Co., com.	4,000,000	1.00	.....	.....	.....
Midwest Oil Co., pfd.	2,000,000	1.00	2%	.....	.....
National Refining Co., pfd.	4,985,300	100.00	2%	Sept. 14	Oct. 1
National Transit Co.	6,362,500	12.50	4% s. a. & 4% ex.	May 31	June 15
N. Y.-Oklahoma Oil	500,000	1.00	1%	.....	.....
New York Transit	5,000,000	100.00	4%	Sept. 21	Oct. 15
Northern Pipeline Co.	4,000,000	100.00	5.00 s. a.	June 11	July 1
Northwest Oil Co.	1,500,000	1.00	.....	.....	.....
Ohio Cities Gas Co.	35,000,000	25.00	1.25	Sept. 15	Oct. 1
Ohio Oil Co.	15,000,000	25.00	1.25 and 4.75 ex.	Aug. 30	Sept. 30
Oklahoma Oil Co., com.	3,250,000	1.00	.....	.....	.....
Oklahoma Oil Co., pfd.	200,000	1.00	1¾%	.....	.....
Oklahoma Prod. and Ref. Co ..	7,500,000	5.00	2½% Q.	Sept. 18	Sept. 30
Okmulgee Prod. and Ref. Co..	5,000,000	5.00	2½% Q.	.....	.....
Omar Oil and Gas Co.	3,000,000	1.00	.....	.....	.....
Osage Hominy	5,000,000	5.00	2½% Q.	.....	.....
Pan-American Pet. and Transport Co., com.	30,494,750	50.00	1.25	Sept. 14	Oct. 10
Pan-American Oil., etc., pfd.	.....	.....	1.75	Sept. 14	Oct. 1
Penn-Kentucky Oil and Gas Co.	400,000	5.00	4% Q.	.....	.....
Pierce Oil Corporation	17,485,750	25.00	.....	.....	.....
Pittsburgh Oil and Gas Co....4	900,000	5.00	2% Q.	.....	.....
Prairie Oil and Gas Co.	18,000,000	100.00	3% Q. and 2.00 ex.	Sept. 30	Oct. 31
Prairie Pipeline Co.	18,000,000	100.00	6%	Sept. 30	Oct. 31
Sapulpa Refining Co.	1,500,000	5.00	2½% Q.	July 1	Aug. 1

(Concluded on page 50)

NORTH TEXAS PRODUCTION SHOWS HEAVY INCREASE—MANY WELLS HELD BACK

Wichita Falls, Tex., Sept. 24, 1918.

North Texas production shows substantial increase for the current week, and the increase is not a fair index to the fields, for the reason that many wells are being held back. This is because of the lack of storage and transportation facilities in the Ranger field. The Texas Pipeline Company from Ranger to Fort Worth and Dallas will probably be completed this month, which will afford some relief. The Prairie Pipeline Company expects the line from Cushing and the north to be completed into Ranger field by November. This will add more to the transportation facilities and help with development.

Wells in the Burkburnett pool are showing good staying qualities, and some of the newer ones are in the gusher class. The question of drilling on town lots has been settled by an agreement that meets the approval of the government authorities to allow two wells to the city block.

Ranger has been quiet, but the number of wells on the sand is increasing, and they are known to be good ones. In order to conserve the oil they are shut down until storage can be provided. Taken as a whole the North Texas field is now known to be the largest field ever found, and if further drilling connects up the several known pools the output will no oubt exceed that of any pool heretofore developed in mid-continent territories.

In Wichita and Wilbarger counties several wells have been brought in within and close to the Burkburnett townsite, all previously recorded, and all good for around 1,000 barrels daily, probably more, thus holding up the pool's record in a splendid manner.

2,000 Barrel Gusher.

The Smith well, to the south and east, below the schoolhouse, which has been the center of interest and expected in for the last two weeks, came in yesterday and is flowing about 2,000 barrels. Big Three Oil Company's block No. 11 Burkburnett townsite came in with an initial flow of 100 barrels per hour. The drillers claim to have penetrated the sand to a depth of 34 feet.

Several wells due to have come in this week on the Burkburnett townsite are delayed on account of waiting for tankage to be set outside the town limits, and pipeline to be laid. The Citizen's Oil Company has a good well, striking a rich deep pay at 1,640, it is reported, and are holding down the well until the tankage is ready. The Fowler Oil Company's Vaugh No. 2 is reported on the sand, with a splendid showing. The Hunt Rigsby, in the Wigham addition, will be in as soon as tanks are provided, and several other wells in this vicinity, to the south and west of the Fowler well, and near the Burkburnett railroad station, are drilling near the 1,600-foot depth.

Completion at Burkburnett, both old and new fields, reported for this week includes Maer, Silk & Willis, Cannon No. 1, 800 barrels at 1,708 feet Floydada, Patrick No. 1, 1,000 barrels at 1,600 feet; Wichita Southern, 500 barrels at 1,584 feet; W. W. Silk, Birk 7, 50 barrels at 1,607 feet; Magnolia Petroleum, Riley 46, 30 barrels at 1,634 feet.

Other wells reported at various stages are Fisher et al., Birk No. 7, swabbing 100 barrels at 1,614 feet; W. W. Silk, Birk 4, pulling casing at 1,610 feet; Panhandle Refining Company, Heiserman No. 10, swabbing 300 barrels at 1,662 feet; W. G. Skelly, Ramming No. 7, cleaning out after shot at 1,568 feet; Humble Oil Company, Schultz No. 15, swabbing 500 barrels at 1,649 feet; Gulf Production Company, Cline-Grant No. 10, flowing 233 barrels after 120-quart shot; Langford Staley et al., Ramming No. 5, swabbing 200 barrels at 1,768 feet; Ruyle farm, Ruyle No. 18, flowing 800 barrels at 1,680 feet; Itex Company, Ramming No. 4, pipe collapsed after being shot; Magnolia Fowler No. 1, pulling pipe, 1,641 feet down.

In the Burkburnett field there are fifty new rigs up. There are also ten new locations reported. About twenty-five rigs are shut down for various reasons.

Electra.

At Electra, only two wells were reported in the week's completions, the Four Six Oil Company's well on the Culbertson lease, Burnett ranch, section 6, swabbing 300 barrels at 1,412 feet, and the Texas Company's Waggoner 169, 60 barrels at 1,886 feet. Two were abandoned as dusters, Heydrick et al., Burnett No. 1, dry at 915 feet, and Magnolia Petroleum Company's Dodson No. 1, dry at 2,800 feet. Stowe et al., Carter No. 1, and Vershal et al., Burnett No. 2, were locations abandoned.

The Empire Oil Company has a fishing job in its Waggoner No. 1 at 2,400 feet. The Texas Company's Skinner No. 38 is drilling at 1,880 feet, and No. 38, down to 876 feet, is being held up, waiting on developments in No. 16 at 1,570 feet. The same company has a fishing job in its Honaker No. 61 and will abandon its Bickley No. 1 and Weaver No. 2.

There are twenty-eight rigs shut down in the Electra territory, according to drilling reports of the various companies. About fifteen are shown to be drilling.

At Holliday, in the south of the county, there is only one well reported drilling, the Walter Smith, McCall & Sanders, now down to 600 feet. Iowa Park also reports one lone rig at work on the Parker et al., Mundon No. 2, which is drilling at 75 feet. There is one new location at Iowa Park, John C. Scott, Munger No. 1.

Petrolia

At Petrolia the Prime Oil Gas Company, Johnson No. 1, is pumping 20 barrels. There is little other drilling in this section.

Eastland County.

During the past week in the Ranger field much was accomplished in the way of bringing production to a point where it could be increased on short notice, as well as proving new territory.

West from the Ranger pool and about six miles northeast the Roper well of the Prairie Oil and Gas Company was drilled into the black lime on the top of the sand and shut down. The well is making black, smoky gas, and has made a head of oil estimated at 50 barrels. This well is not likely to be drilled to the sand until pipeline transportation relieves the storage situation.

The finding of oil in the Roper well has proven up the big basin between Eastland and Ranger, which was doubtful to the oil men. This well is drilled to a depth of 3,235 feet, and located one-half mile west of the Butler.

The finding of oil in the Roper well caused a great deal of speculation in royalties. Some sales of royalty in the Harrison tract, east of the Roper were recorded at a rate of $6,000 an acre. Some Fort Worth capitalists who had bought half of the royalty of the Norwood tract south of the Roper made a comfortable fortune from the increase in value. The farmers, who are the heaviest holders of royalties at this time, found they had suddenly become rich.

Butler Increases Flow.

The Butler well of the Texas and Pacific Coal and Oil Company has increased its flow during the week. This is due possibly to the tremendous gas pressure receding somewhat. Oil from this well is overflowing the tanks at the well and is being held in a hurriedly constructed earthen reservoir.

Pipelines were completed today to carry the oil to the Prairie Company's tank farm near Ranger, and it is likely that this well will be drilled into the sand this coming week.

The No. 1 Breisford well of the Gulf Production Company, one and a half miles north of Eastland, is drilling after having trouble with a flat hole. This well today is 3,154 feet deep and in black lime. It is making some gas and a small amount of oil at about ten feet in the lime. This showing is considered excellent.

Howard Makes 500.

The Howard well of the Prairie Company, one and a half miles northwest of Ranger, hit the top of the sand at 3,517 feet and began flowing at a rate of about 500 barrels daily. The production of this well will be greatly increased when drilled in.

No. 1 Holcomb of Cosden & Co., two miles northeast of here, hit a flow of gas estimated at 2,000,000 feet at a depth of 1,054 feet. Drilling was resumed and the well has a depth of 1,200 feet. The heavy flow of gas still continues, and it is possible that a shallow sand may be picked up around 1,400 feet.

The field south of Ranger has renewed activity since the bringing in of the Duke well, seventeen miles south in Comanche county. This week a rig was placed on the John Foster tract, ten miles southeast of Ranger and two miles northeast of the Underwood. The Underwood was abandoned at 3,680 feet. The F. P. Perrin tract, one mile west of the Foster tract, has been acquired by Fort Worth parties and a syndicate formed to put down a deep test.

The Gulf Production Company last Sunday drilled their No. 2 Fincher well into the sand about six feet, and the well has increased its flow from 500 barrels to more than 3,000 barrels daily. This is by far the largest producer to date in Stephens county. This well is twenty miles north of Eastland and extends the Parks field east about two miles.

Della Cassel on Sand.

Northwest of Eastland, about fifteen miles in Stephens county, the No. 1 Della Cassel well of the Lone Star Oil and Gas Company hit the top of the sand at 3,300 feet and oil sprayed over the derrick. Drilling was stopped and tanks are under construction preparing to drill into the sand. The important feature of this well is the fact that it extends production south in Stephens county about five miles.

The Kemp and Kell deep test, three miles south of Putman, thirty miles east of Eastland in Callahan county, is drilling at a depth of 3,555 feet today. Much speculation is rife as to this well hitting the deep sand. Theory has it, however, that the formation dips to the west, and will be found at a depth of about 3,700 feet. The Kemp and Kell contract calls for a test to be drilled to a depth of 4,000 feet.

Pipeline Almost Completed.

The Texas Company's pipeline is making preparations to begin the transportation of oil about October 1. The line will have a capacity of 15,000 barrels daily, with a pumping plant at Ranger. However, it is reported that a pumping station will also be installed midway between Ranger and Fort Worth. This should give this 8-inch line a capacity of more than 25,000 barrels daily.

The construction of storage in the Ranger pool is approximately 20,000 barrels daily, and with the Texas Company's pipeline taking 15,000 barrels daily the seriousness of the production situation should be relieved. The production, however, of the Ranger pool could be increased to more than 50,000 barrels daily on short notice of facilities to store or transport the oil.

Comanche County.

Oil developments throughout the county and the construction of hard surfaced roads is about to bring Comanche county to her own. As a result of the producing Duke well in the northern part of the county, Comanche is certain to be thoroughly exploited for oil and gas.

Land is being leased and contracts let for the drilling of deep test wells. The Downing is being rushed to completion, and all indications are that it will make good. The Sipe Springs well is under fire and deals are pending for the construction of one or more derricks near town. Oil interests are bringing thousands of dollars to the people of Comanche county.

Work will begin in a few days on the "oil belt" route and the Fort Worth highway, which will give employment to every man in the county, and especially the farmers who have failed to reap a harvest.

Business men are very optimistic over the outlook and are preparing for the great volume of business that is certain to come their way. A boom is not expected or wanted in Comanche, but it is generally believed many improvements will be made both in town and out in the rural districts.

Erath County.

Many interesting stories are told about the farmers who last year were the "devil's poor," but recently found their way through gushing oil wells into the ranks of American capital. Some are classed as millionaires, others rank among the well-to-do, but none are little fellows now.

After dame fortune came their way they at once purchased fine cars, many of them are constructing comfortable homes in Mineral Wells, Cisco and Eastland City, while a few have gone West and invested their capital in ranches and Holstein cattle. The mercantile business had promised during prospects to others.

A drilling contract has been made by McJunkin & Co. on the Stroud farm, four miles east, and rig timbers are now being placed.

Moss & Erdman and Burt & Griffith have a large block south of Dublin in the Edna Hill neighborhood, and will make a location within a few days. The rig and tools are now on the road for this well, which will be started as soon as material arrives.

Burt & Griffith, on the Davis farm, ten miles east, have started up after skidding the rig, due to a bad hole, and are down 300 feet.

On the Cage farm, north of the Davis, the same company is getting ready to start up after a shutdown of several weeks, due to a fishing job.

Four miles south of Stephenville the same company is getting ready to build a rig on the Roberts farm.

These three wells will test out the territory southeast of Stephenville and well down toward the south end of the county along the east side. An extension of this test will probably be made over into Hamilton county, location having been made by the Trinity Oil Company on the Kelly, north of Hico.

A contract has just been closed with Harrington & Robinson of Joplin, Mo., for a 3,500-foot test well just north of Stephenville. The operators have about 6,500 acres under lease, the lease joining the townsite. The contract calls for drilling to begin by October 1.

Davis well No. 2, south of Stephenville, is drilling at about 450 feet. Davis No. 1 had a cave-in and had to be abandoned.

The McJunkin well is down 2,600 feet and is shut down for fuel. Both the Long and Fuller wells are temporarily shut down. They are being drilled by the Texas and Pacific Coal and Oil Company, and operations have been suspended until the return of W. K. Gordon from New York.

Leasing is active throughout the county, there being very little land that has not been leased for drilling purposes.

San Saba County.

The development of prospective oil and gas lands is taking on considerable activity in San Saba county, especially in the northwestern part in the vicinity of Locker. Within a radius of ten miles of the town three wells are now drilling and several other locations have been made.

McGee No. 1 on the Cummings lease is down about 700 feet, and is setting the 10-inch casing. The owners claim to have found very encouraging formations. The Regency well No. 1, three and a half miles northeast of Locker, has considerable water at 850 feet. The well has been shut down awaiting the arrival of casing.

Five miles north of Locker, the Carter well is a location. They expect to begin drilling in about thirty days. The Roxana Company has a location two and a half miles southeast of Locker. The Lick Hollow Oil and Gas Company, a Richland Springs company, has contracted with Oklahoma parties for the drilling of a well on the J. M. Locker lease, half a mile northeast of the town of Locker.

Coleman County.

During the past week nothing of any importance has happened in the Coleman county oil fields except the gas and oil strike in the Wood & Wooley No. 2 on the Overall lease, eight miles southwest of Coleman. A strong gas flow was struck at 1,115 feet, a heavy wet gas, quite different from the big gasser in their No. 1 on the Overall. The oil sand was picked up at 1,150 feet, but they had gone five feet in the sand, and up to the present have not gotten out, and the operators say it will be at least two weeks before drilling will be resumed.

The Snyder Oil Cofpany on the Jones lease, nine miles northwest of Coleman, has a good showing of oil at 1,953 feet, and drilling was continued until the bit was dropped.

It seems that hard luck is featuring all of the Coleman county wells. The Sun Company's No. 1 on the Thate lease was almost to the oil sand of Mitchell No. 1 when they had all kinds of trouble and under-reaming to do.

Materials are daily arriving for wells in every direction from Coleman, but the one that is interesting the citizens most is the one four miles south on the Candler farm.

Monday afternoon numbers of people went out to the Gray ranch to see Mitchell No. 2 shot. Oil went over the derrick for quite awhile, thirty minutes or more.

Brown County.

The past ten days have been live ones with oil men in this vicinity. The shallow well district has been overworking itself. During the past week the Patterson Oil Association, a Houston firm, brought in three wells in this section. They report that any of these wells will produce at least 20 barrels a day and that one of them will do better than that. Sweatt and associates also report a new well this week. It will produce about 10 barrels a day.

The Renfro-Hall-Gully well is approximately 400 feet deep. This is a wildcat well, located on the Dinkard lease. It is creating quite a little excitement, and if brought in will greatly enlarge the shallow field district.

Another good well was brought in last week three miles west of Brownwood on the Bangs road. It was estimated at first at be a 400-barrel well, though conservative reports are that this amount is too large. It will, however, produce about 200 barrels a day.

At this time there are something like fifteen deep test wells going down. These wells range all the way from 1,000 to 3,000 feet in depth, and are causing much attention to be given to deep oil possibilities. One of these wells, located four miles west of Brownwood, is almost 2,000 feet deep. At 1,940 feet a small amount of oil was found. At 1,980 feet another stream of oil was encountered. Neither of the strikes amounted to much, and drilling has been resumed. The formation in this well is similar to that found in the De Leon well, and oil men are eagerly watching this well. It is thought that it will be brought in some time in the near future, with a result that will prove Brownwood to be in the deep-well district.

A Great Oil Field.

Oil men, including members of the National Petroleum War Service Committee, are of opinion that the new oil field of North Central Texas has prospect of being the largest oil pool ever found. The production of this field, now less than a year from its discovery, is in excess of 50,000 barrels a week, and more than that much additional production is held back in wells on top of the oil sand, because there is not adequate storage or transportation facilities. In the more than forty counties comprising the North Central Texas oil region as mapped by the old companies, approximately 600 wells are under way, actual drilling having been started on approximately 300, while rigs are up or building on the others. Of the entire 600 more than 50 per cent. are being delayed because of want of material or water. A large part of the trouble in so far as material is concerned is in getting it on to the ground. This oil field has been proven in part, and this part of the field extends from Res Rver in the vicinity of the wonderful new Burkburnett pool to Brownwood, 150 miles south.

PETROLEUM COMPANIES—STOCK AND DIVIDENDS.

(Concluded from page 49)

Company.	Outstanding capital.	Par.	Last dividend.	Stock of record.	Payable.
Savoy Oil	600,000	5.00	3%	Sept. 14	Sept. 30
Sequoyah Oil Co.	1,500,000	1.00	2½%	.....	.....
Sinclair Gulf Corporation	‡713,852	†	.....	.....	.....
Sinclair Oil and Refining Co.	‡1,000,000	†	1.25 Q.	.....	.....
Solar Refining Co.	2,000,000	100.00	5.00 s. a.	May 31	June 20
Southern Pipeline Co.	10,000,000	100.00	5.00 Q.	Aug. 15	Sept. 3
South Penn Oil Co.	20,000,000	100.00	5% Q.	Sept. 12	Sept. 30
S.-W. Penn. Pipeline	3,500,000	100.00	5% Q.	Sept. 15	Oct. 1
Standard Oil—					
California	100,000,000	100.00	2½% Q. & 2½ ex.	Aug. 15	Sept. 16
Indiana	30,000,000	100.00	3% Q. and 3% ex.	Aug. 5	Aug. 31
Kansas	2,000,000	100.00	3% Q. and 3% ex.	Aug. 31	Sept. 14
Kentucky	6,000,000	100.00	3% Q.	Sept. 6	Oct. 1
Nebraska	1,000,000	100.00	10% s. a.	May 20	June 20
New Jersey	98,338,362	100.00	5% Q.	Aug. 20	Sept. 16
New York	75,000,000	100.00	3% Q.	Aug. 15	Sept. 16
Ohio	7,000,000	100.00	3% Q. 1% ex.	Aug. 30	Sept. 19
Swan & Finch Co.	1,000,000	100.00	2½%	Oct. 1	Nov. 1
The Grass Creek Petroleum Co.	1,000,000	1.00	3% Q. and 3% ex.	April 15	May 1
The Texas Co.	55,500,000	100.00	2½% Q.	Sept. 12	Sept. 30
Tidewater Oil Co.	31,900,000	100.00	2% Q. 3% ex.	Sept. 14	Sept. 30
Tuxpam Star Oil Co.	600,000	1.00	.....	.....	.....
Union Oil Co. of California	36,809,500	100.00	1.50 Q. and 1.00 ex.	June 10	July 20
Union Tankline Co.	12,000,000	100.00	2½% s. a.	Aug. 30	Sept. 25
United Western Cons.	1,000,000	5.00	.....	.....	.....
Vacuum Oil Co.	15,000,000	100.00	5.00	May 1	May 15
Wayland Oil and Gas Co.	1,500,000	5.00	2% Q.	June 1	June 11
Wayland Oil and Gas Co., pfd.	300,000	5.00	3%	Sept. 1	Sept. 10
Washington Oil Co.	100,000	10.00	40% an.	.....	.....

*In liquidation. †No par. ‡Shares.

Tin Will Be Distributed Under System of Licenses.

Washington, Sept. 28, 1918.

The War Industries Board is to take charge of the domestic pig tin situation under a license system, according to a statement made public by Bernard M. Baruch, chairman of the board. All users and dealers in pig tin will be licensed, and a complete inventory of stocks on hand and contracts unfilled will be made, and, if necessary, supplies will be re-distributed to equalize same according to essential uses. Full details of licensing plan will be announced later.

OIL RISKS.

Conference on Insurance of Oil and Oil Properties to Be Held in Chicago Oct. 1.

Chicago, Sept. 26, 1918.

The committee recently appointed to consider the advisability of organizing an association to write oil risks has called a meeting of the companies interested, to be held in the assembly room of the Insurance Exchange in Chicago on next Tuesday morning, October 1.

The committee is composed of J. H. Carr, of the Hartford Company; C. R. Tuttle, of the North American; Neal Bassett, of the Firemen's of Newark, N. J., and John C. Harding, of the Springfield Insurance Company.

The objects of the association are to unify the practices of writing insurances on crude oil and oil properties and to reduce the hazards and improve the conditions of the business. Liability on any one risk would be limited to $200,000, and subscriptions would be asked for in multiples of $5,000 per company.

GASOLINE TESTS.

Methods Determined by Interdepartmental Committee on Standardization.

Washington, Sept. 28, 1918.

Methods of test for standard gasoline specifications for the army and navy use and for the Allies were determined upon by the sub-committee of the inter-departmental committee on standardization of petroleum specifications at conferences on Wednesday and Thursday.

This decision will be reported to the presidential committee at a gathering called by Mark L. Requa, director general of the Oil Division of the United States Fuel Administration, who is chairman of the inter-departmental conference. The meeting will be held the first of next week, and the standards will be promulgated in the trade before the end of the week.

PETROLEUM **Oil, Paint and Drug Reporter** SECTION

100 WILLIAM STREET. SEPTEMBER 30, 1918. NEW YORK CITY.

PETROLEUM PRODUCTION, BOTH CRUDE AND REFINED, BEING PUSHED TO THE UTMOST—WHAT THE FIELDS SHOW FOR THE WEEK.

The situation in the petroleum market, both crude and refined, is growing more tense as demands increase and the Government assumes more and more the position of controller of output and distribution. There is nominally a "settled" condition as far as prices are concerned, with nothing to be looked for unless the Government directors—Messrs. Garfield and Requa—shall loosen the strings. At present these are tied tightly and the knots waxed.

There is, however, an increasing pressure upon refiners since the kerosene situation is by no means satisfactory. Mr. Requa has appealed to the refiners through Chairman A. C. Bedford, of the Petroleum War Service Committee, to bring production of this commodity to the highest pitch. The increased demand from the Allies and from our armies in the fields of France for motor fuel has made the "gasolineless Sunday" a fixture as far as can be deduced, and there is a possibility that still further extension of the one-day embargo on motor fuel use for pleasure cars may be made. Under normal conditions, with such riding, a decline in October from the high point of August and September could be looked for, but this year the overseas call for gasoline and motor naphthas more than offsets the normal. The demand for kerosene, which of late years has been more or less a drug on the market, is already picking up, and the prospects of still more stringent fuel and coal regulations than were in force last year has turned the eyes of consumers to kerosene as a source of heat, with the natural result. The stocks of this product, too, are considerably lower than they were a year ago, and have dropped approximately 70,000,000 gallons since the first of the present year, despite an increase in production.

From the Felds.

Between the tariff agitation, the heavy tax imposts on the wildcatter, the scarcity of material and labor and the lack of water in certain fields the path of the petroleum producer is no easy one, yet the reports generally of production show a continuance of the drive for more crude oil.

There is an immense amount of wildcat work in Kentucky and Tennessee and through Alabama; in fact, the best of the wildcat operations are now in the fields which promise the higher grades of oil.

Eastern Felds.

Kentucky still heads the list as a high-grade oil-producing State, with 90 completions and 4,100 barrels of new oil, compared with 97 completions and 6,765 barrels of new production during the previous week. The total number of completions in the Eastern field for the week was 201, with 5,176 barrels new output, as against 9,566 barrels last week. While this is a falling off, both in completions and production, it compares favorably with recent reports from this territory.

North Louisiana.

The Pine Island field in Louisiana has created a boom like nothing experienced along the coast previously except the great Caddo boom. This field is only a year old, and yet it is one of the most consistent and persistent producers in the entire country, with almost every well a good producer and so few dusters that this bane of the producers' life is almost negligible. The prize well of the week there was a 3,000-barrel gusher.

Gulf Coast.

Two new pools in the Gulf Coast section of the petroleum fields of the United States, emphasized by the bringing in of a 3,000-barrel well at Hull, in Liberty county, is the best news for some time from the Texas division. Wildcat work is slowing down somewhat, but the consensus of the reports from the Gulf Coast are optimistic. The report for the interval shows 41 completions, with 5,675 barrels of new production, as against 11 completions, with 2,400 barrels of new oil, during the previous week. Goose Creek had 6 completions, with 1,895 barrels of new oil, and Hull, with 1 completion, topped the producer list with 3,000 barrels. The increase in new production for the period over the previous week was 3,275 barrels of oil.

Kansas.

There is a temporary slump in the Kansas section of the Mid-Continent division, all due to Butler county—El Dorado—declines. The production of the fields of Kansas for the period was 129,000 barrels a day, as shown by the pipeline runs, one large producer, which heretofore has been averaging more than 60,000 barrels of crude a day, dropping to less than the 50,000-barrel mark. One of its wells, which came in with 10,000 barrels of initial output a few months ago, is now rated at 250 barrels a day.

Wyoming.

The situation in Wyoming is decidedly dubious. So many wells have been shut down, and such has been the effect of the Government's closing of lands in the Salt Creek territory that there has been a sharp reduction in output, despite the crying demand of the Government for crude oil. It is reported that one of the largest companies in Wyoming has made application to withdraw several applications for land patents from the Land Office of the Department of the Interior, and this should bring matters to a head within a short time.

Refined Products.

The scarcity of kerosene and the drive with the refineries to boost production to the utmost was the feature of the refined market during the week. The gasoline question is in statu quo, with general participation by consumers in the Government's plans for the saving of every drop of gasoline possible. In fact, the observance of the Government's conservation suggestion was on a parity with the observance should the "suggestion" have been an order.

For details of field work, prices for domestic and export oils and products, runs, deliveries, etc., see the following pages.

PUTTING THE PETROLEUM INDUSTRY ON A LICENSE BASIS BY PRESIDENTIAL PROCLAMATION.

Beginning on October 1 all the large importers, manufacturers, handlers and distributors of various grades of petroleum and its products will be placed under Federal license, by proclamation of the President. The new declaration, as applicable to the industry, specifies the following groups or classifications:—

All persons, firms, corporations, and associations engaged in business as:—

(a) Importers of crude oil, fuel oil, gas oil, kerosene, or gasoline;

(b) Manufacturers of fuel oil, gas oil, kerosene, or gasoline;

(c) Distributors or marketers of crude oil, fuel oil, gas oil, kerosene, or gasoline;

(d) Transporters of crude oil, fuel oil, gas oil, kerosene, or gasoline (except those specifically exempted by said act of Congress);

(e) Producers of natural gas who also distribute and market their product;

(f) Distributors or marketers of natural gas;

(g) Transporters of natural gas (except those specifically exempted by said act of Congress);

excepting, however, retailers of crude oil, fuel oil, gas oil, kerosene, gasoline, or natural gas whose gross sales of crude oil, fuel oil, gas oil, kerosene, gasoline, and natural gas do not exceed one hundred thousand dollars ($100,000) per annum, are hereby required to secure on or before October 1, 1918, a license, which license will be issued under such rules and regulations governing the conduct of the business as may from time to time be prescribed by the President of the United States, or by the United States Fuel Administrator acting by virtue of the authority heretofore as aforesaid, or hereby, delegated to him by the President.

The regulations just issued, and which will be found in full on another page of this issue, following very closely the lines of priority preference already laid down, although they do not forbid the delivery of gas oil or fuel oil by any licensee to any jobber or distributor to, if such jobber or distributor shall be licensed by the United States Fuel Administrator. Railroads, bunker fuel, oil producers, refineries and pipelines, fuller's earth plants and the Panama Canal, are first preferences; then exports for the army and navy, and allies' forces, then public utilities, under the existing priorities list, shipyards, navy yards, arsenals, hospitals, etc. The balance of the distribution is almost the same as the recognized fuel priority list, long operative.

Similar regulations are also in effect as regards natural gas, with domestic service first.

PETROLEUM TRADE AND NEWS ITEMS.

The Choctaw Refining Company is to erect a new refinery at Ardmore, Okla.

The Texas Company is planning the erection of a distributing station at Tampa, Fla., to cost $150,000.

The Prairie Pipeline Company is to extend its three-inch pipeline from Delaware, Okla., to the Foreman field, five miles from Wann, Okla.

The Humble Oil and Refining Company, which increased its capital recently from $4,000,000 to $4,090,000, is to build a 2,000-barrel refinery at an estimated cost of $2,000,000.

Thee Natural Resources Development Company has been incorporated at Tulsa, Okla., by A. M. Bush, Carl K. Dresser and James P. Ryan; the two latter are from Bradford, Pa.

Formal steps have been taken by W. B. McCormick and S. A. Guy to make possible the piping of gas from the Terrebonne field to New Orleans. Backed by the favorable report made recently by the Geographical Survey, the presentation made to the Capital Issues Committee apparently was received favorably.

The Empire Company's new dehydrating plant on the Boyer tank farm, Butler county, Kan., is well under way, with 100 men at work. The plant is the invention of H. O. Ballard, superintendent of oil production, and when completed 16 men will do the work ordinarily carried out by the 450 men now employed. There will be a saving on power and in fuel, and 900 h. p. will do the work now requiring 5,000 h. p.

The American Pipe line Company has completed its connections between Bowling Green, Ky., and the Johnson pool of northern Allen county, and will begin runs within the next week. This oil, it is stated, will be shipped to Louisville for refining.

"It is due to the ability of motor trucks to eat up distance that the manufacturer and wholesaler, as well as the large retailers, have been able to eliminate branches and sub-branches that formerly tied up considerable capital and labor," says C. T. Silver, metropolitan distributor of the Kissel Motor Car Co. "This has resulted in a concentration of equipment and facilities that not only reduces operating expenses, but eliminates duplicate handling of goods."

Lieutenant John Caron, son of Charles Caron, manager of the Old Dominion Oil Company, who is just back from the fighting front, was one of the speakers at a recent meeting of the Rotary Club, of Louisville.

The General American insulated tank car is so constructed that the contents remain at practically the same temperature, no matter what the weather conditions, with the result, according to Vice-President and General Manager David Copeland "that from 100 to 200 gallons a trip are saved during the summer months, as compared with wastage with the old-style tank car." General use of the cars during the summer months would result in a saving of from 3,000,000 to 4,000,000 gallons of gasoline, it is claimed.

Re-paint Your Tank Cars

Frequent painting of tank cars is both good insurance and good advertising. It keeps them from deterioration. It advertises your name and your product wherever the car goes. It enables quick identification of your equipment in crowded classification yards.

When repainting, first use a wire brush to take off all scale and old paint. Then apply at least one coat of good quality paint. After that has dried, stenciling should be applied using white lead and zinc.

Standard Tank Cars

are built to meet all the requirements of the Master Car Builders' Association and are also in accordance with the Laws of the Federal Safety Appliance Committee and the Interstate Commerce Commission.

Built for a Purpose—Not for a Price.

Tank Cars built, repaired and rebuilt.

PROMPT DELIVERIES

Write any office for particulars, specifications, blue prints and any engineering information.

STANDARD CAR CONSTRUCTION COMPANY

OFFICES:

NEW YORK	ST. LOUIS	CHICAGO	PHILADELPHIA
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WORKS: Sharon, Pa.

MAKE A NOTE—when you attend the Independent Oil Men's Association Convention, Biltmore Hotel, New York, October 8, 9, 10, 11, to visit us at Booth 23. You will be cordially welcome.

We can make prompt deliveries

FUEL, OIL AND GAS MANUFACTURERS AND HANDLERS MUST BE LICENSED BY OCT. 1

Only Those Doing Business of Less Than $100,000 Annually Exempted—Applications to Be Made to Fuel Administration.

Washington, Sept. 28, 1918.

Under a licensing plan, which becomes effective October 1, importers, distributers or marketers of crude oil, fuel oil, gas oil, kerosene or gasoline, and producers, distributers and transporters of natural gas are obliged to obtain licenses. Retailers of oil in its various forms and of natural gas, when their business does not exceed $100,000 annually, are not obliged to take out licenses. These regulations are effective under a proclamation of President Wilson, issued September 16, the essential sections of which follow:—

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the powers conferred on me by said act of Congress hereby find and determine and by this proclamation do announce that it is essential, in order to carry into effect the purposes of said act, to license the importation, manufacture, storage and distribution of certain necessaries to the extent hereinafter specified:—

All persons, firms, corporations and associations engaged in business as— (a) Importers of crude oil, fuel oil, gas oil, kerosene or gasoline;

(b) Manufacturers of fuel oil, gas oil, kerosene or gasoline;

(c) Distributors or marketers of crude oil, fuel oil, gas oil, kerosene or gasoline;

(d) Transporters of crude oil, fuel oil, gas oil, kerosene or gasoline (except those specifically exempted by said act of Congress);

(e) Producers of natural gas who also distribute and market their product;

(f) Distributors or marketers of natural gas;

(g) Transporters of natural gas (except those specifically exempted by said act of Congress); excepting, however, retailers of crude oil, fuel oil, gas oil, kerosene, gasoline or natural gas, whose gross sales of crude oil, fuel oil, gas oil, kerosene, gasoline and natural gas do not exceed $100,000 per annum, are hereby required to secure on or before October 1, 1918, a license, which license will be issued under such rules and regulations governing the conduct of the business as may from time to time be prescribed by the President of the United States, or by the United States Fuel Administrator acting by virtue of the authority heretofore as aforesaid, or hereby, delegated to him by the President.

The United States Fuel Administrator shall supervise, direct and carry into effect the provisions of said act and the powers and authority thereby given to the President, as the same applies to crude oil, fuel oil, gas oil, kerosene, gasoline or natural gas and to any and all practices, procedure and regulations authorized or required under the provisions of said act, including issuance, regulation and revocation, in the name of said Fuel Administrator, of licenses under said act; and in this behalf he shall also do and perform such other acts and things as may be authorized or required of him from time to time by direction of the President, and under such rules and regulations as may be prescribed by the President from time to time.

For all the purposes aforesaid the United States Fuel Administrator may make use of the said governmental organization called the United States Fuel Administration.

Application for licenses must be made to the United States Fuel Administration, Oil Division, Washington, D. C., upon forms approved by the Fuel Administration for that purpose. The holders of existing licenses issued by the United States Fuel Administration are not required to secure a new license.

Any such person, firm, corporation or association who, without a license, or whose license shall have been revoked, knowingly engages in or carries on any business for which a license is required under this proclamation, will be liable to the penalties prescribed by said act of Congress.

PETROLEUM LICENSING REGULATIONS WILL BECOME EFFECTIVE ON TUESDAY, OCT. 1.

Washington, Sept. 28, 1918.

Regulations for the licensing after October 1 of persons and firms engaged in the transportation and distribution of oil and gas were promulgated on Thursday by Mark L. Requa, director of the Oil Division, United States Fuel Administration. This action was taken under the Presidential proclamation.

Mr. Requa emphasized the fact that all concerns coming within the provisions of the President's proclamation must obtain licenses by that date, October 1.

Retailers of natural gas and oil in its various forms whose business does not exceed $100,000 annually are not affected. The regulations follow:—

Rules and Regulations Governing Licenses Engaged in the Business of Importing, Manufacturing, Distributing and Transporting Crude Oil, Fuel Oil, Gas Oil, Kerosene, Gasoline and Natural Gas.

Rule 1.—No licensee engaged in the distribution of fuel oil or gas oil shall, without the consent of the United States Fuel Administrator, make any deliveries of fuel oil or gas oil to any customer or consumer of any one of the classes mentioned below, whether the licensee is under any contract to make delivery to such customer or consumer or not, until such licensee shall have delivered to the customers of every class designated by a lower number with whom such licensee may have contracts or to whom such licensee shall have been directed to deliver by order of the United States Fuel Administrator, all fuel oil or gas oil to be delivered upon such last mentioned contracts or such orders of the United States Fuel Administrator; but nothing herein contained shall prevent delivery of oil available at one point because of inability due to failure of transportation facilities to make like delivery at another point. Preferential deliveries as between members of the same class may be made only with the consent and under the direction of the United States Fuel Administrator. This rule shall apply to all deliveries of fuel oil or gas oil, regardless of any contracts theretofore or hereafter made: Provided, That this rule shall not prevent the delivery of fuel oil or gas oil by any licensee to any jobber or distributor if such jobber or distributor shall have been licensed by the United States Fuel Administrator.

Fuel and Gas Oil.

The classes referred to and the order of their preference in that part of the United States east of the Rocky Mountains are as follows:—

1. Railroads; bunker fuel (excepting fuel for vessels operated for pleasure purposes); oil producers; refineries and pipelines burning fuel oil; plants engaged exclusively in the production of fuller's earth for use in connection with oil refining processes; Panama Canal.
2. Exports for the United States Army and Navy.
3. Exports for the navies and other war purposes of the Allies.
4. Hospitals.
5. Public utilities, but only to the extent necessary to supply customers entitled to receive fuel oil or gas oil under the priority list; domestic consumers.
6. Shipyards engaged in government work.
7. Navy yards.
8. Arsenals.
9. Plants engaged in the manufacture, production and storage of food products, including ice; plants engaged exclusively in manufacturing implements used in agriculture, including binder twine; plants engaged exclusively in manufacturing fertilizers, including phosphate plants.
10. Army and Navy cantonments.
11. Industrial consumers engaged in the manufacture of munitions and other articles under government orders, to the extent that fuel oil is needed in the manufacture of such orders.
12. All other classes.

The classes referred to and the order of their preference in that part of the United States west of the Rocky Mountains are as follows:—

1. Railroads; bunker fuel (excepting fuel for vessels operated for pleasure purposes); oil producers; refineries and pipelines burning fuel oil; public waterworks delivering water for other than agricultural purposes; lighthouses; fire departments; Panama Canal.
2. Exports for the United States Army and Navy.
3. Exports for the navies and other war purposes of the allies.
4. Hospitals.
5. Public utilities, light, heat and power, but only to the extent necessary to supply customers entitled to receive fuel oil or gas oil under the priority list; domestic consumers.
6. Plants engaged in the manufacture, production and storage of food products, including ice; irrigation plants for agricultural purposes.
7. Plants engaged exclusively in manufacturing implements used in agriculture.
8. Shipyards engaged in Government work; logging industry.
9. Navy yards.
10. Arsenals; cantonments.
11. Industrial plants engaged in manufacturing munitions and other articles under Government orders, to the extent that fuel oil is needed in the manufacture of such orders; mines producing metals necessary for governmental use for war purposes.
12. Other classes.

Consumer Classification.

The classification of consumers adopting the use of fuel oil or gas oil after the date of these rules and regulations shall be subject to special determination by the United States Fuel Administrator. In the absence of such determination they shall be entitled to delivery only after all other consumers have been supplied.

Rule 2.—No licensee engaged in the distribution of natural gas shall, without the consent of the United States Fuel Administrator, make any deliveries of natural gas to any customer or consumer of any one of the classes mentioned below, whether the licensee is under any contract to make delivery to such customer or consumer or not, utnil such licensee shall have delivered to the customers or consumers of every class designated by a lower number with whom such licensee may have contracts or to whom such licensee shall have been directed to deliver by order of the United States Fuel Administrator, all natural gas to be delivered upon such last-mentioned contracts or such orders of the United States Fuel Administrator; but nothing herein contained shall prevent the delivery of natural gas at one point because of inability due to failure of transportation facilities to make like delivery at another point. Preferential deliveries as between members of the same class may be made only with the consent and under the direction of the United States Fuel Administrator. This rule shall apply to all deliveries of natural gas, regardless of any contracts theretofore or hereafter made. In applying this rule it is permissible, in order to save loss to manufacturing plants, to furnish a sufficient supply of natural gas to permit the banking of fires or for other temporary emergencies, regardless of the priority list.

This rule shall not prevent the wholesale delivery of natural gas by a producing company to a transporting or distributing company to the extent necessary to enable the final distributing company to make deliveries within the classes to which the producing company is able to make direct delivery under this rule. To this extent the terms of existing contracts between such companies shall not be affected by this rule unless otherwise ordered by the United States Fuel Administrator.

The classes referred to and the order of their preference are as follows:—

Class 1.—This class includes domestic service, which is defined as including the reasonable use of natural gas where now used for heating, lighting and cooking in private homes, boarding houses, apartment houses, hospitals and other charitable institutions; and the use of natural gas where now used for lighting and cooking only in hotels, restaurants, bakeries and eating places, and for heating in hotels where separate rooms are dependent upon natural gas for use in grates and stoves. This class also includes gas-engine power for the production and distribution of natural gas and petroleum and its products and in the operation of gas engines for the production of coal.

Class 2.—The use of natural gas in gas engines where other power cannot be used, and for gas engines for generating electric current for street cars and domestic service, the heating and lighting of business offices and stor where other means for the production of heat and light cannot reasonably be substituted. Where natural gas is being used in limited quantities for scientific, experimental, mechanical or manufacturing purposes, where other means for producing light, heat and power for such purposes cannot be reasonably substituted, an amount essential to such use may be furnished.

Class 3.—The use of natural gas where now used for heating buildings not included in classes 1 and 2; also the lifting and refining of petroleum oil by steam or heat, and all other classes of gas engine power, including the generating of electric current for industrial purposes to plants engaged in manufacturing munitions and other essential war articles under government orders to the extent that current is needed in the manufacture of such orders.

Class 4.—The use of natural gas for the production of food products, and industrial consumers engaged in manufacturing munitions and other essential war articles to the extent that said natural gas is needed in the manufacture of such essential war articles under government orders, and for the generating of steam power for public utilities.

Natural Gas.

Class 5.—The use of natural gas for all other purposes.

The classification of consumers adopting the use of natural gas, or customers applying for natural gas, after the date of these rules and regulations shall be subject to special determination by the United States Fuel Administrator. In the absence of such determination, they shall be entitled to deliver only after all other consumers and customers have been supplied.

Rule 3.—Neither these rules and regulations nor the orders fo the United States Fuel Administrator shall relieve any licensee from his obligation to deliver fuel oil, gas oil or natural gas which he has contracted to deliver, nor any purchaser of fuel oil, gas oil or natural gas from his obligation to purchase fuel oil, gas oil or natural gas which he has contracted to purchase, when such prevention resulting from such rules, regulations or orders shall have ceased to operate, and the fuel oil, gas oil or natural gas shall be available for delivery and purchase under such contracts.

Rule 4.—It shall be the duty of each licensee to give to the United States Fuel Administration any information concerning the conditions and management of the business of the licensee. Such information shall be on blanks to be furnished by the United States Fuel Administration, or in such other form as may from time to time be required, and whenever required such information shall be furnished in writing under oath.

Rule 5.—The licensee shall keep such records of his business as shall make practicable the verification of all reports rendered to the United States Fuel Administration and which shall contain the details of every transaction, including full particulars of all purchases and sales, contracts and agreements. The authorized representative of the United States Fuel Administration shall be at full liberty, during ordinary business hours, to inspect any and all property stored or held in possession or under the control of the licensee, and all records of the licensee. All necessary facilities for such inspection shall be extended to such representative by the licensee, his agents and servants.

Rule 6.—The licensee shall not, in the conduct of his business, make any unjust, exorbitant, unreasonable, discriminatory, or unfair commission, profit, or storage charge. He shall keep the products sold by him moving to the consumer in as direct a line as practicable and without unreasonable delay. Resales within the same trade without reasonable justification, especially if tending to result in a higher market price to the retailer or consumer, will be dealt with as an unfair practice.

Rule 7.—The licensee shall not buy, contract for, sell, store, or otherwise handle or deal in any product covered by his license for the purpose of unreasonably increasing the price or restricting the supply of such product, or of monopolizing, or attempting to monopolize, either locally or generally, any such product.

Rule 8.—The licensee shall not knowingly sell any product covered by his license to any person engaged in the business of selling such product who shall, after this regulation goes into effect, violate the provisions of the act of Congress approved August 10, 1917, by making any unreasonable rate or charge in selling or otherwise handling or dealing in such product, or by holding, contracting for or arranging for a quantity thereof in excess of the reasonable requirements of his business for use or sale by him for a reasonable time, or who shall violate any rule, regulation, or order of the United States Fuel Administrator.

Rule 9.—All contracts hereafter entered into by any licensee for the purchase, sale, or distribution of crude oil, fuel oil, gas oil, kerosene, gasoline, or natural gas shall contain a provision that the same shall be subject to cancellation or assignment, in whole or in part, at any time, upon the request or order of the United States Fuel Administrator.

Rule 10.—The licensee shall promptly comply with all orders of the United States Fuel Administrator with respect to the delivery of any product covered by his license, the submission of reports, and other matters proper and necessary to carry into effect the President's proclamation of September 16, 1918.

These rules and regulations shall apply to all lincensees heretofore licensed, or hereafter licensed under the proclamation of the President dated September 16, 1918, and shall supersede all rules and regulations heretofore issued.

H. A. Garfield,
United States Fuel Administrator.
Washington, D. C., September 24, 1918.

KANSAS OIL MEN

Organize to Fight Water Troubles—D. J. Marshall President.

Wichita, Kan., Sept. 28, 1918.

The Kansas Oil Men's Association was organized in Wichita last Wednesday by electing Deering J. Marshall president; A. E. Hoenig, of the Carter Oil Company, vice-president; R. A. Sperry, of the Gypsy Oil Company, secretary, and R. A. Griffith, of the Sinclair Oil Company, treasurer.

An executive committee is to be selected by representatives of the various operators, who will direct the affairs of the association.

The object of the association is to fight the water troubles which have lately been menacing the oil wells of Butler county, and it will be the object of the association to see that all wells in Butler county are cemented to keep the water out. The water menace is believed to be due chiefly to improper work in the field, and scientific methods are to be used, under the direction of a field force employed by the association, whose duty will be to devote their efforts to the water situation. A record of all wells in which water is encountered will be kept, and the data opened to all the companies in the association. It was estimated that it would take $30,000 to cover the expenses of the first year, which will be raised by assessing the different companies operating in the field.

I. O. M. A. PROGRAM FOR CONVENTION

Patriotism Will Be Keynote —Opens at Biltmore Hotel Oct. 8.

The preliminary program of the New York convention of the Independent Oil Men's Association points to the fact that the sessions are to be conducted with the wartime needs of the country the prevailing incentive. The "Petroleum Industry War Session" convention opens at the Biltmore, in this city, on Tuesday, October 8, and closes on Friday, October 11. The program as announced is as follows:—

Tuesday, October 8.

Luncheon, in convention room, first floor, 12.30 p. m.
Community singing, led by War Camp Community Service song leader.
Convention called to order, President M. J. Byrne.
Address of welcome, Lewis E. Pierson, chairman of the board, Irving National Bank; chairman of the board, Austin, Nichols & Co.; vice-president, Merchants' Association of New York.
Response, Mr. M. J. Byrne, president I. O. M. A., Waterbury, Conn.
President's address.
Address by Mr. Henry L. Doherty, member National Petroleum War Service Committee.
Address by Sergeant Alexander Coubrough, overseas speaker for the American Red Cross.
Adjourn to exhibit rooms.

Wednesday, October 9.

Morning.

Convention called to order at 10 o'clock.
Address, "Diplomacy as Applied to the Petroleum Industry," Mr. C. D. Chamberlin, general counsel, National Petroleum Association, Cleveland, Ohio.
Address, "What the Producer Means to the Petroleum Industry," Mr. T. A. O'Donnell, Washington, D. C.
Address, "Concrete Oil Storage Tanks," Mr. J. E. Freeman, technical engineer.
Address.

Afternoon.

Convention called to order at 2 o'clock.
Community singing, led by War Camp Community Service song leader.
Address, "Fake Oil Stock Advertising," Mr. Merle Sidener, chairman of the National Vigilance Committee of the Associated Advertising Clubs of the World.
Address, Oil Trades Association of New York.
Address, "The Associated Cooperage Industries of America," Mr. C. C. Berry.
Address, "Lubrication," Mr. John Rome Battle, M. E., technical department, Swan & Finch Company, Philadelphia, Pa.
Adjourn to exhibit rooms.

Evening.

Hippodrome.

Thursday, October 10.

Morning.

Jobbers' business session.
Convention called to order at 10 o'clock.
Reading of minutes of previous meeting.
Report of secretary.
Report of treasurer.
Election of officers and directors.

Afternoon.

Convention called to order at 1 o'clock..
Luncheon.
Community singing, led by War Camp Community Service song leader.
Address, new president.
Address, "Loyalty," Mr. A. C. Bedford, chairman National Petroleum War Service Committee, Washington, D. C.
Address, Mr. Charles E. Carpenter, Philadelphia Oil Trade Association.
Address, "The Transportation Question," Mr. Clifford Thorne, general counsel American Petroleum League, Chicago, Ill.
Adjourn to exhibit rooms.

Evening.

Complimentary dinner to members and guests by Eastern Oil Men, 7 o'clock.
Community singing, led by War Camp Community Service song leader.
Speakers—
Senator Henry C. Lodge.
Hon. Mark L. Requa, oil director United States Fuel Administration.

Friday, October 11.

Patriotic Day.

Convention called to order at 10 o'clock.
Community singing, led by War Camp Community Service song leader.
Address, "Y. M. C. A."
Address, "Army."
Address, "Navy."
Address, "War Camp Community Service."
Address, "Knights of Columbus."
Address, "Salvation Army."

Mexican Oil Shipments for August Totaled 5,036,140 Barrels.

Tampico, Mexico, Sept. 23, 1918.

Complete figures of the oil exportations through the ports of Tampico and Tuxpam for the month of August are now available. The Penn-Mex Fuel Company's shipments did not come up to earlier estimates by about 200,000 barrels, but the total shipments of all the companies through the two ports exceeded the 5,000,000-barrel mark by 36,140 barrels. The exports were as follows:—

Huasteca Petroleum Company, 1,563,759; **Aguila (Eagle)** Oil Company, 709,772; Penn-Mex Fuel Company, 448,724; Freeport Oil and Transportation Company, 448,771; Island Oil Company, 246,300; National Petroleum Company, 56,014; Mexican Gulf Petroleum Company, 258,099; the Texas Company, 177,868; East Coast Oil Company, 331,750; Cortez Oil Company, 309,500; Standard Oil Company, 485,584.

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Viscous, Non-Viscous Neutral Oils,
White Wax, Steam Refined Cylinder Oils

COSDEN & COMPANY

TULSA, - - OKLAHOMA

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HIGH GRADE

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GULF COAST OPENS TWO NEW POOLS; PRODUCTION SHOWS GAIN FOR PERIOD

Houston, Tex., Sept. 25, 1918.

Results at Big Hill, in Liberty county, and West Columbia, in Brazoria county, in the past two weeks practically assure two new oil fields in the coastal plain of South Texas. At Big Hill, near Hull, Liberty county, the Republic Production Company (J. S. Culinan, et al.) brought in a 3,000-barrel well, and at West Columbia, in Brazoria county, Dan Japthet and associates brought in a well variously estimated as good for from 1,000 to 2,500 barrels. The West Columbia well caught fire from the heavy gas pressure and was lost.

The well at Big Hill, near Hull, is the Republic Production Company's No. 6 Dolbear on the Houston Oil Company's land and is located 400 feet due south of its No. 4. It came in flowing September 20 from a depth of 2,915 feet, having set 6-inch casing at 2,715 feet. It is important to note that the pay in No. 6 was fully 500 feet lower than in No. 4, providing the dope of the oil scouts is correct. The company's No. 5 Dolbear is reported to be drilling at 3,200 feet. This location is about 500 feet west of the Republic's east line of the Dolbear 800-acre lease owned by the Houston Oil Company. The Texas Company's test in the B. S. & F. No. 1 survey is down below 2,200 feet, and that of R. E. Brooks, Jr., trustee, is drilling at 3,000 feet a mile and a half northeast of No. 3 Dolbear. The Gulf Production Company has started drilling its test in the Underton survey, north of the Dolbear acreage, while its No. 1 Thomas in the south half of the Devore league is tied up with an injunction suit.

Disastrous Fire.

What is thought to have been the best well completed in the new West Columbia district so far, was destroyed by fire. The well was known as the Tyndall-Wyoming Oil and Development Company's No. 1 Hogg and was the first producing well in this district. It was drilled some time ago and was a small producer at 2,802 feet, but has not been producing for some time. The Tyndall-Wyoming recently sold part of its holdings at West Columbia to Dan Japther and associates, and the No. 1 Hogg was included in the transfer. Recently Mr. Japthet decided to deepen this well, and at 2,858 feet the drill opened up a flow of gas estimated at about 5,000,000 cubic feet, the well blowing dry gas from noon September 12 to Sunday night, September 15, when it started spraying oil. The oil kept increasing for 24 hours, when it caught fire, the flow being estimated at from 1,000 to 2,000 barrels. The oil and gas is supposed to have caught fire from friction against the hook in the traveling block. The flow checked September 17, when the fire was easily extinguished with little trouble. It is thought the well is lost, as the sand cut out the strainer and casing. Another hole will probably be drilled near it. The Texas Company recently got a big gas well in its No. 1 Arnold, which was so strong it was impossible to do anything further with it, and the gas is being used to drill other tests. The Texas Company is testing its No. 10 Ho-- around 3,050 feet. Its Nos. 11 and 12 Hogg are drilling at 1,800 and 1,900 feet, respectively. Company is moving in extra heavy rig material for No. 9, which is to be a deep test. No. 2 Arnold is drilling at 1,200 feet. The Gulf Production Company is drilling No. 1 McMeans below 2,200 feet. John Hanicker et al have set 6-inch casing in No. 1 Robertson at 2,400 feet. The Hunble Oil Company is drilling two tests, No. 1 Gereaud below 1,800 feet and No. 1 Bullock-Nash at 600 feet. Bashara et al. are drilling No. 1 Bullock at 1,915 feet.

Older Districts.

Drilling operations in the older districts of the Gulf Coast had nothing of a spectacular nature to offer for the week. Results were about the average, with several completions at Goose Creek, the largest being of 1,000 barrels. Humble had half a dozen completions, but none of them were large. Spindletop had several good wells. There was more than the usual number of completions, a decided increase over the number completed last week, when 11 tests were completed. This week 41 were completed, but 17 of them were wells abandoned. Last week there were 3. The total amount of new production for the week under review was 5,675 barrels from 23 producing wells, an increase over the figures given last week of 3,275 barrels, when 2,400 barrels new production was obtained from 8 producing wells. Most of this week's production came from Hull, its new well having an initial production of 3,000 barrels.

Goose Creek.

Goose Creek has 1,895 barrels from four producers; Spindletop, 275 barrels from 5 producers; Jennings, 180 barrels from 2 wells; Humble, 120 from 4; Damon Mound, 70 barrels from 2; Batson, 65 barrels from 1, and Saratoga, 30 barrels from 1 producer. Sour Lake, Markham and Edgerly had no completions, while Vinton had 4, but they were all failures. Damon Mound had 4 failures also, and two producers; Goose Creek and Humble, 1 failure each; Saratoga, 3; Spindletop, 1, and at New Iberia the Gulf Refining Company abandoned the only well drilling in that district, No. 1 Schwing, at 3,100 feet. Two wildcat tests were abandoned and one is said to be pumping 40 barrels at Barbers Hill, in Chambers county. There are a dozen more tests rigging up this week than there were last week. Owing to the unusual number of completions for the week, there is slightly less number of tests drilling.

Windstorm Wrecks Derricks.

During the week Goose Creek was visited by a severe windstorm that blew down a dozen derricks. Production in that district was around 41,000 barrels daily average. The big well of E. F. Simms & Co., No. 16 Sweet, which ran wild for nine days and is now under control, continues to produce oil at the rate of 5,000 barrels daily. The Humble Oil and Refining Company completed No. 33 on its 25-acre Gaillard tract around 3,300 feet, flowing 1,000 barrels, which was the largest producer in coastal fields, outside of the Hull well, for the week. The Gulf Production Company completed two wells on its Beaumont Petroleum Company lease, No. 19 flowing 800 barrels and No. 12 making 75 barrels. The Gulf bailed No. 1 Busch dry at 3,400 feet. It will test higher up. Cheek et al. have abandoned No. 2 on Hogg Island. The Gal-Tex Oil Company No. 2 Ashbel Smith is pumping 20 barrels. No. 20 Gaillard, joint test of the Gulf Coast Oil Corporation and the Crown Oil and Refining Company is setting screen. The Humble Oil and Refining Company's No. 5 Beaumont Petroleum is drilling deeper. No. 2 Tabb is also being deepened. E. F. Simms & Co. have a number of tests which should be completed soon. Four of them are drilling below 3,000 feet, the deepest being No. 11 Schilling, down near the 3,400-foot sand; there are 65 tests drilling at Goose Creek, and 20 new derricks.

Humble.

The Texas Company's big well, No. 230 Landslide, is still flowing 2,000 barrels daily, and production in that district has held up to 18,500 barrels for the week. The Texas Company deepened its No. 3 Stevenson, pumping 25 barrels. Its No. 229 Landslide was a 75-barrel pumper, No. 165 Herman was a small gas well, and No. 166 Herman a 10-barrel well. Prewett et al. have abandoned No. 1 Schafer. Bradley Bros. have completed two more wells on their Moore lease, No. 11 pumping 20 barrels and No. 12 pumping 10. No. 13 is near completion. The Invincible Oil Company (Nellis Esperson is down 3,335 feet in No. 1 Palmer, a mile west of the Herman 500-acre lease. North of the San Jacinto River, on its shores, the West Production Company is drilling No. 1 Stateland at 2,850 feet. The Texas Company is setting strainer in No. 165 Harrel; Kennedy Bros. are doing the same in No. 3 Long, and the Pilant Lake Oil Company is preparing to pump No. 6 Collier at 970 feet. Humble has 39 tests drilling and 18 new derricks.

Sour Lake.

Several wells are testing. The Lake Oil Company is bailing No. 12 Jackson at 2,375 feet, and the Houston-Sour Lake Oil Company has set strainer in No. 1 Rogers. The Sun Company is drilling No. 42 Higgins deeper and has made a location for a new test. The two tests of the Yount-Lee Oil Company are still shut down. Considerable more activity is noticed lately in the Sour Lake district. Sixteen tests are drilling and 4 derricks are up at new locations.

At Saratoga.

The San Bernardo Oil Company completed No. 3 Dies, pumping 30 barrels. The Humble Oil and Refining Company and the Paraffine Oil Company are testing a sand found at 1,600 feet in No. 1 Casswell. The Texas Company has abandoned Nos. 2, 3 and 5 Nancy Fuller. The Lee Oil Company set strainer in No. 6 McShane and got salt water. The Sun Company is also building a standard rig for No. 135, and is rigging up for No. 138. No. 137, which flowed for several days at the rate of 1,000 barrels, has stopped and will be put on the pump. There are 11 tests drilling and derricks up for 4 more.

At Spindletop.

There were 6 completions, all producers but one, which was a test belonging to Winn & Abel, abandoned at 950 feet. The largest well in this district for the week and the best one completed there for two or three months was the Baker Oil Company's No. 1 Trembly, pumping 150 barrels. The Shallow Sands Oil Company completed No. 5 Yellow Pine, pumping 65 barrels. The Unity Oil Company had a 25-barrel well. B. Y. Benton No. 8 Gladys was a 15-barrel well, and R. W. Roote had a well pumping 20 barrels, all of them from the 800-foot sand. Spindletop has 7 tests drilling and 3 new derricks.

Damon Mound.

At Damon Mound several tests were abandoned, there are now but 12 drilling and 2 new derricks. The Kansas City-Houston Oil Company got a 30-barreler in No. 1 Bryan. Webber & Andregg's No. 4 Lucas pumped 40 barrels. The Swift Oil and Sulphur Company abandoned No. 1 Horn. The Sinclair Gulf Oil Corporation, which is doing most of the drilling, abandoned 3 tests, No. 9 Bryan, No. 6 Masterson and No. 7 Wisdom.

Batson.

The Paraffine Oil Company's No. 3 Choate is pumping 65 barrels oil and considerable water. The National Oil and Drilling Company is testing a well and the Gulf Production Company another. Thad McClain got a water well in No. 9 Hooks. There are derricks up for 4 new tests and 6 tests are drilling.

Jennings had a 80-barrel well completed by the Investors Oil and Gas Company, No. 1 Leguerre, and 1 of 100 barrels completed by the South Coast Oil Cimpany on the Crowley tract. Completions in the other South Louisiana fields were not so fortunate; test by the Gulf was abandoned at New Iberia, while Vinton had 4 wells abandoned and Edgerly a salt water well. This was the Gulf Refining's No. 5 Landry at 3,100 feet.

At Vinton the Vinton Petroleum Company abandoned No. 4 Harmony, the Victory Company abandoned No. 1 Vincent, and the Avery Martin Oil Compan- abandoned No. 1 Perry. The Managan Oil Company abandoned No. 1 Johnson.

Wildcat Work Slowing Down.

Very few wildcat tests have been started in the Gulf Coast country in the past several weeks. This is due to the scarcity and high price of material and the position of the government in discouraging wildcatting by irresponsible parties. Most of the prospecting is now being carried on by the more important companies. Two tests were abandoned during the week, 1 in South Louisiana. In Cameron Parish, La., the Hackberry Oil Company abandoned No. 1 Ellendor in section 12-10-28. The Southern States Oil Company has abandoned its test in Orleans parish, section 23-9-5, No. 1 de Bora.

Prospecting in Liberty county, outside of Big Hill, near Hull, continues active. At Davis Hill the Humble Oil and Refining Company is drilling its 10th test. On the Trinity River, south of Liberty, Vernor & Hamilton tested No. 1 Condit and got salt water, and are drilling deeper. On Day Lake the Empire Gas and Fuel Company is sidetracking in No. 2 Jackson and will make a deep test. Same company's No. 3 Welder is drilling below 3,000 feet, and its No. 1 Wilson is waiting on material.

Blowout Wrecks Derrick.

Scouts and some of the officials of the more important companies have been investigating a blowout 14 miles north of Huntsville, in Walker county, on the Luther Eastham, Jr., land in the J. S. Collard survey. The test was started over a year ago by Dr. A. J. Queen & Co. of Muskogee, Okla. They drilled it to about 1,200 feet and shut it down. Recently the property was taken over by the Majestic Oil Company (D. L. Peters, et al.) and the hole was deepened to 2,007 feet, when it was again shut down. On September 3 it began gassing and a day later was throwing sand and water over the top of the derrick. The second day it blew out a crater 35 feet in diameter, allowing the derrick and tools to drop out of sight. The tools were the property of McCann & Harper of Shreveport, La., and were valued at $5,000. Considerable gas is still coming up through the water. Since the blowout leasing has been quite active in that locality.

At Hoskins Mound, Brazoria county, the Texas Company has 4 rigs running, testing out a sulphur proposition. Same company also has 2 rigs at Freeport. At Stratton Ridge the Roxiana Petroleum Company is down 2,325 feet.

Near Hockley, Harris county, the Gulf Production Company is drilling No. 6 Warren at 2,100 feet. At Seabrook the Brunson & Rentz Drilling Company, which bought out the holdings of the Taylor Lake Oil Company, are getting ready to test out a sand below 3,400 feet.

In Fort Bend county, near Blue Ridge, the Gulf Production Company is drilling at 2,000 feet in No. 2 Bassett-Blakley. Near Rosenburg the Island Lake Oil Company is rigged up to deepen No. 1 on the Tarkerton tract.

New Companies Chartered.

The following new companies were chartered at Austin during the past week:—

Sunshine Slope Oil Company of Wichita Falls; capital stock, $40,000. Incorporators:—W. A. Freear, Ivan Murchison and C. W. Hendricks.

W. T. Charles Oil and Refining Company of Houston; capital stock, $99,000. Incorporators:—R. B. Morris, L. C. Charlton and J. L. Brown.

Ranger-Cisco Oil Company of Cisco; capital stock, $500,000. Incorporators:—J. J. Patterson, J. W. Triplitt, A. L. Mayhew and J. R. Skinner, all of Cisco.

Elta Oil Company of Bowie, Montague county; capital stock, $50,000. Incorporators:—C. H. Boedeker, William A. Ayres and A. E. Thomas, all of Montague county.

Fred Campbell Oil Company of Dallas; capital stock, $150,000. Incorporators:—A. C. Parker, J. Fred Smith of Dallas and J. F. Barker of Wichita Falls.

Permits to do business in Texas were granted to the Valeria Oil and Gas Company of Chicago; capital stock, $50,000. Texas headquarters at Coleman. Southern Acid and Sulphur Company of East St. Louis, Ill.; capital stock, $2,000,000. Texas headquarters at Texarcana and Port Arthur.

Permit to sell stock under the blue sky law was granted to the Liberty Refining and Oil Products Company of Yale, Okla. It is desired to sell $100,000 of stock in Texas.

Amendment was filed by the Weimer Oil Company of Houston, reducing the par value of its shares to $1 and increasing its capital stock from $60,000 to $100,000.

Notes.

A dividend of 10 per cent. was declared at a meeting of the stockholders of the Crown Oil and Refining Company, held at Houston, during the week. The company was organized a year ago and capitalized at $2,000,000. Most of its holdings are in the Gulf Coast fields. The following are officers and directors of the company:—J. C. Stribling, Llano, president; A. A. Hufstutler, vice president, Georgetown; R. L. Young, Houston, secretary and general manager.

The Mary Ownes Oil Company has bought the holdings of Head, Shatzle & Posey at Benavites, in the Piedras Pintos field, and the property consists of 172 acres of land, on which are four shallow wells with a daily production of 0 barrels. The Mary Owen Oil Company will drill several new wells on the property.

The rapidly increasing business of the Humble Oil and Refining Company in Houston has caused the company to move its sales and traffic departments from the eighth floor of the Goggans building to the third floor of the Gulf building. The executive offices remain in the Goggans building.

The Magnolia Petroleum Company has bought a tract of land fronting on the Neuces River, near Port Neuces, about half way between Port Arthur and Beaumont. The sum paid was $80,000. The purpose for which the tract was purchased has not been made public.

More than thirty members of the Houston Engineers' Club were guests of Superintendent Lederer and Jack Watson, chief engineer of the Galena-Signal Refinery, during the week. The men were given a trip down the Houston Ship Channel and shown over the refinery.

Completions for Week.

The following is a list of completions in all coastal fields for the week ending September 21:—

GOOSE CREEK.

Gulf Production Company, No. 1 Busch; abandoned.

Gulf Production Company, No. 12 Beaumont Petroleum, making 75 barrels on standard rig.

Gulf Production Company, No. 19 Beaumont Petroleum, flowing 800 barrels.

Gal-Tex Oil Company, No. 2 Ashbel Smith, pumping 20 barrels.

Cheek et al. No. 2 Hogg; abandoned.

Humble Oil & Refining Company, No. 33 Gaillard, flowing 1,000 barrels.

HUMBLE.

Texas Company, No. 229 Landslide, pumping 75 barrels.

Prewett et al. No. 1 Schafer; abandoned.

Texas Company, No. 165 Hermann; gas.

Texas Company, No. 166 Hermann, pumping 10 barrels.

Bradley Bros., No. 11 Moore, pumping 25 barrels.

Bradley Bros., No. 12 Moore, pumping 10 barrels.

SARATOGA.

Texas Company, No. 2 Nancy Fuller; abandoned.

Texas Company, No. 3 Nancy Fuller; abandoned.

Texas Company, No. 6 Nancy Fuller; abandoned.

San Bernardo Oil Company, No. 3 Dies, pumping 30 barrels.

SPINDLETOP.

B. Y. Benton, No. 8 Gladys, pumping 15 barrels.

Shallow Sands Oil Company, No. 5 Yellow Pine, pumping 65 barrels.

Baker Oil Company, No. 1 Trembly, pumping 150 barrels.

Unity Oil Company, No. 4 Chaison, pumping [illegible] barrels.

Winn & Abel, No. 1; abandoned.

R. W. Root, No. 1, pumping 20 barrels.

BATSON.

Paraffine Oil Company, No. 2 Choate, making 300 barrels fluid, of which 65 barrels is oil.

DAMON MOUND.

Kansas City-Houston Oil Company, No. 1 Bryan, pumping 30 barrels.

Sinclair Gulf Oil Corporation, No. 7 Wisdom; abandoned.

Sinclair Gulf Oil Corporation, No. 9 Bryan; junked.

Sinclair Gulf Oil Corporation, No. 6 Masterson; abandoned.

Webber & Andregge, No. 4 Lucas, pumping 40 barrels.

Swift Oil and Sulphur Company, No. 1 Horn; abandoned.

NEW IBERIA.

Gulf Refining Company, No. 1 Sun-Schwing; abandoned.

JENNINGS.

Investors Oil and Gas Company, No. 1 Leguerre, pumping 80 barrels.

South Coast Oil Company, No. 1 Eunice Crowley, pumping 100 barrels.

VINTON.

Vinton Petroleum Company, No. 4 Harmony (drilled deeper); abandoned.

Victory Company, No. 1 Vincent; abandoned.

Managan Oil Company, No. 1 Johnson; abandoned.

Avery Martin Oil Company, No. 1 Perry; abandoned.

EDGERLY.

Gulf Refining Company, No. 5 Landry; salt water.

WILDCATS.

Chambers County.—United Petroleum Company, No. 1 Fisher, at Barbers Hill, pumping 40 barrels.

Cameron Parish.—Hackberry Oil Company, No. 1 Ellerder, section 12-10-28; abandoned.

Drilling Synopsis.

The following table is a synopsis of drilling operations in all districts of the Gulf Coast division for the week ending September 21:—

District.	Comp.	Prod.	Aban.	Rigs.	Drg.	Tot.
Edgerly	1	..	..	2	6	8
Jennings	2	180	..	2	5	7
Vinton	4	..	4	3	9	12
New Iberia	1	..	1	1	..	1
Batson	1	65	..	4	6	10
Goose Creek	6	1,895	2	20	65	85
Humble	6	120	2	18	39	57
Markham	..	..	..	1	1	2
Saratosa	4	30	3	4	11	15
Sour Lake	..	..	..	4	16	20
Spindletop	6	275	1	3	7	10
Damon Mound	6	70	4	2	12	14
West Columbia	..	..	..	4	10	14
Hull	1	3,000	..	3	4	7
Wildcats	3	40	2	20	40	60
Totals for week.	41	5,675	17	91	231	322
Totals last week.	11	2,400	3	79	248	327
Difference	30	3,275	14	12	7	5

5,036,140 BARRELS OF PETROLEUM SHIPPED FROM MEXICO DURING MONTH OF AUGUST

Tampico, Mexico, Sept. 14, 1918.

The petroleum exports of the Penn-Mex Fuel Company from the port of Tuxpam just received, shows an exportation of 448,724.22 barrels, as follows:—

Date, ship, destination.	Barrels.
2....Standard, New York	118,275.30
5....Trontolite, Pisagua, Chile	50,990.36
10....H. H. Rogers, New York	106,856.36
12....Chas. Pratt, New York	105,043.86
27....W. C. Teagle, Baltimore	59,557.82
Total	448,724.22

This brings the shipments for the month of August from the three Mexican ports of Tampico, Tuxpam and Porto Lobos to over 5,000,000 barrels of oil. This is a big increase over previous months' shipments, and is due to the enormous shipments of the Huasteca Petroleum Company (1,563,759.22 barrels) and to the exports of the Island Oil and Transport Company and the Cortez Oil Company from Porto Lobos, both being new shippers.

August Exports.

The oil exports by the various companies for August, according to the complete returns now available, follow:—

	Barrels.
Huasteca Petroleum Company	1,563,759.22
Aguila Oil Co. (Mexican Eagle)	709,772.27
Penn-Mex Fuel Company	448,724.22
Freeport and Mexican Fuel Oil Co.	448,769..65
Island Oil and Transport Company	246,300.00
National Petroleum Company	56,014.17
Mexican Gulf Oil Company	258,090.25
Texas Company	177,866.76
East Coast Oil Company	331,750.84
Cortez Oil Company	309,500.00
Standard Oil Company	485,583.70
Total	5,036,140.08

There was another big well brought in this week in the southern fields, being the Texas Company's Tepetate No. 2, on lot 11. Tepetate which was drilled in Tuesday and is now flowing at the rate of 3,000 barre's daily, although not yet on pay. The well will be pushed deeper, and it is confidently believed that it will be a good one, even for that district, where wells run from 50,000 barrels upward. Details of this well are lacking, as telephone communication with the lower country has been lacking this week, and such news as comes through is brought up by travelers. It is claimed that the well now is making 25,000 barrels, but at the Texas Company's offices they say that it is flowing now about 2,500 or 4,000 barrels, but they expect the big pay to come in at any time and expect a big well.

The Transcontinental Petroleum Company's well, Barberena No. 2, that was drilled in a few weeks ago, was officially tested by the government inspectors this week, and is reported by them to have a production of 75 000 barrels of petroleum daily. The drill was still in the hole when the well came in, but has been removed now, and there consequently is an increase in the output. The well is the largest in the district, according to the government inspector, Mr. Gonzales. This is the first well the Standard Oil Company has obtained from the Transcontinental properties. They have several other promising prospects which are expected to develop into producers within the next few weeks.

The Atlantica Company is receiving material for use in its refinery, wharf and other enterprises in the Porto Lobos section. This week a considerable shipment arrived from New Orleans on the steamer Mexico. Work, however, will not be commenced until more construction material arrives.

Routine in Fields.

This has been an exceedingly quiet week in the fields, and there has been little but routine work done, and not a great deal of that. Conditions have been rather unsettled in some parts, and reports from some of the camps have not been received at the company's offices in Tampico. A good many of the field men came in Thursday, September 12, to register under the new draft law, but they came in in shifts, so as not to close down the drilling operations.

There was a report the first of the week that the East Coast Company's Halcyon had come in big in the Panuco field, but the report was unfounded. The well is down about 2,400 feet and making about 200 barrels of oil daily, but has been flowing about that quantity for several weeks. Wednesday it blew six times, but the company officials here have little if any hope of striking pay. Drilling will be continued for a time longer, but it is almost a foregone conclusion that the well will be abandoned.

Tanker Loading.

The Huasteca Petroleum Company loaded seven tankers the first ten days of the month,

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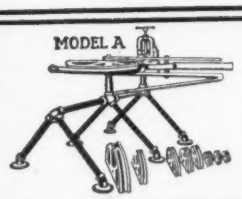

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three of which belonged to the Union Line, the other four were Huasteca Company tankers. The San Joaquin and La Habra of the Union Line sailed for South American ports and the La Brea of the same company, as well as the four tankers of the Huasteca Company, sailed for ports in the United States.

The National Petroleum Company's tanker Holden Evans left Monday for New Orleans with a cargo of 31,176.72 barrels of petroleum.

The Huasteca Company is still pulling casing on several dry holes. The company is drilling no wells at present.

Tepetate No. 3 of the Mexican Gulf Company is waiting orders to drill in. This well is in the lower country and it is generally believed that when the company is ready to bring it in that it will be anywhere from 50,000 barrels and up.

Isiota No. 1 of the Mexican Gulf is waiting for cement to set on 8-inch casing before having the well inspected by government inspectors.

Barberena No. 6 of the Transcontinental Company is rigging up preparatory to begin drilling.

Barberena No. 5 reports no change since last report.

Chinampa No. 1 sent no report this week.

Pablo No. 1 is drilling at 1,607 feet in shale.

Barberena No. 3 has reached a depth of 1,895 feet and drilling continues regularly.

Barberena No. 4 is getting ready to resume drilling. The present depth is 1,507 feet.

Tampuche No. 1 of the Panuco-Tuxpam Company is shut down at 2,300 feet, waiting for cable. There is a strong showing of gas and oil, and it is expected that it will come in soon after drilling is resumed.

expected that it will come in soon after drilling is resumed.

Comales No. 1 of the Island Oil and Transport Company is still shut down.

The well on lot 8, Tepetate, of the same company, is running an 8 inch pipe preparatory to drilling in.

On lot 162 Chinampa, the Island Oil Company is putting down 8-inch casing and getting ready to drill deeper.

The Island Oil and Transport Company has made application for a permit to drill on lot 169, Chinampa.

Chinampa No. 2 on lot 163, of the Continental-Mexican Petroleum Company, is down 750 feet in shale.

Tepetate No. 2 of the International Oil Company is waiting for 8-inch casing to set at 1,760 feet and for the government inspectors to test the work.

Tamboyoche No. 3 of the Cia. Mexicana de Combustibles, S. A., has resumed drilling and now is at 2,305 feet. This is the well that was reported as giving a production of 2,500 or 3,000 barrels. The report was erroneous.

neous.

The East Coast Oil Company's well on the Mazda lease at Topila is still shut down waiting for cable.

The Island Oil and Transport Company has made applications for permits to start drilling on several new locations. The applications have not yet been acted on.

Naranjo No. 8 of the Aguila Oil Company (Mexican Eagle) reports the derrick finished and the rigging up.

Drilling on all other wells of the Aguila Oil Company is suspended for the present.

The Corona Company has received no reports from its San Jose de las Rusias camp this week.

Other Field Work.

The Texas Company received no reports from its camps this week, due to lack of telephonic communication between Tampico and the districts in which their camps are located.

The Felix Martinez No. 2, on which work has been suspended by Contractor Campbell, who is in the States at present, is reported to be making small quantity of oil.

Chiconcillos No. 1, on lot 2, of the Tepetate Company is down 1,070 feet, according to reports received Tuesday, September 10.

Barragan No. 2 of the Tampascos Company is at 2,042 feet and drilling.

The Texas Company has finally finished its fishing job on Abando No. 2 and is preparing to resume drilling.

This week the government inspectors went down to Port Lobos to test the Cortez Oil Company's pipeline.

The Cortez Company is expectin~ three tankers in today or tomorrow at its Port Lobos terminal, and an effort will be made to load them in record time. There is somewhat of a rivalry between the Cortez and Island companies at Port Lobos, both of them having recently put in sea-loading lines and both of them being anxious to prove its line the best by making quicker loading records. The Island Company has the best record so far, and it is this record that the Cortez Company expects to smash.

WYOMING CRUDE OIL DECREASE DUE TO WELLS SHUT DOWN ON GOVERNMENT LAND

Lander, Wyo., Sept. 25, 1918.

The cry from all over is the shortage of crude oil, and there may be a reason for this, although so far a shortage is only known to those that hear it on the streets and not out in the fields, where the fluid is produced. Things must shape themselves more to the oil man's wishes in Wyoming, or the field that is now supplying a large part of the gasoline for the world will decrease in a hurry. Government land is the real trouble, and until these things are settled for once and all, the oil men will refuse to invest their money in lands held by the government. These land suits started are a bugbear to the wealth of the State. One of the latest cases to be brought is the case of the government against the Columbine Oil Company and the Ohio Oil Company. R. G. Taylor, a Casper resident, validated certain tracts of land in the Salt Creek field by the drilling of shallow holes and finding showings of oil in the shale formation. Taylor then turned these leases over to the Columbine Oil Company, and the latter company in turn made an agreement with the Ohio Oil Company to develop the territory on a percentage, and the Ohio Oil Company drilled two wells that are good producers, and indicated by that that its intentions were clearly that it intended to develop the property as rapidly as it could. Then came the government, which stepped in and started proceedings against the Ohio and Columbine Oil companies under the wastage laws. What the case will develop into remains to be seen. This trouble has shut down many wells, not alone in the Salt Creek field, but all over Wyoming, where wells are being drilled on government lands. The Midwest Oil Company, according to reports, had filed application to withdraw several of its applications for patents from the Land Office of the Department of the Interior, and was occupying the property waiting the next move of the government, and this is likely to bring matters to a head within a short time and oblige the government agents to come out on a definite line of procedure. Upon the decision of these cases depends the future of the petroleum development in Wyoming. There is no doubt but what Wyoming is one of the rich oil States, and the people of the State would receive a rich harvest from it, but the average oil man from now on will take leases only on land that is owned by a company or individual, or the State of Wyoming, which has so far been fair in its dealings with the petroleum people.

In the Lusk field, in Niobrara county, there are several wells that are close to the pay sand, and will mean much for the new field should they prove paying wells.

The Ohio Oil Company is delayed by a fishing job at its Powder River well. A report was that a mystery was being made of the well, but such is not the case.

The Big Muddy field is remaining active in development work, and the new wells brought in from day to day will about offset the decline in the older ones, so that the average daily production is not increasing to any extent. Salt Creek is on the down grade, owing to the shutdown of development work on government land.

The Oriental Oil Company failed to find a lower pay in its well in the Lander district, and will plug off the bottom and try out the upper sand, which had a showing.

PINE ISLAND RESPONSIBLE FOR BIG BOOM IN NORTH LOUISIANA—LIKE CADDO BOOM

Shreveport, La., Sept. 28, 1918.

Never since the days of the boom in the old Caddo oil field has there been such activity and remarkable development and so many opportunities for investment in the North Louisiana oil field as in the Pine Island section, which was discovered a little over a year ago.

Large bonuses continue to be paid for leases and assignments continue to be made at large prices. W. R. Ramsey has assigned to H. Avery 10 acres in section 10 and 30 acres in section 3-21-15 for $8,750. W. C. Holmes has assigned 80 acres in section 18-21-15 and 160 acres in section 1-18-15 to the Humble Oil and Refining Company for $33,170.50, and the Atlas Oil Company has assigned a lease of 40 acres in section 26-21-15, 10 acres in section 12-21-14 and 80 acres in 2-21-15 to the Palmer Company for $15,250.

A sale of mineral rights in the heart of the pool that has been attracting attention is that of Mrs. Lydia H. MacMullen and Sam W. Mason to H. H. Myers for an aggregate sum of $14,000. The deal comprises 40 acres in the southeast of the southwest of section 23-21-15, Mrs. MacMullen being paid $10,000 for a quarter interest and Sam W. Mason $4,000 for a tenth interest. This land is in close proximity to the recent large well brought in by the Texas Company, flowing 100 barrels in the same section, and is considered proven territory.

The Texas Company is to be credited with the prize well of the week's development in its well on the Caddo Mineral Land Company lease in section 23-21-15, No. 21 coming in flowing 2,000 barrels. Noel Fee B-5 was completed, pumping 28 barrels, in section 34-20-15, and J. F. Herndon No. 1 is also a pumper of 50 barrels in section 14-21-15. No. 1 Hanzen is good for 100 barrels in section 23-21-15.

Kinnebrew & Ratcliff have their No. 1 Heilperin pumping 200 barrels in section 26-21-15 and the Lotus Oil Company has a pumper in No. 1 Rowe-Baird of 215 barrels in section 23-21-15.

The Gulf Refining Company completed three wells this week, one on the Ferry Lake lease in section 24-20-16, No. 155, flowing 55 barrels; one in section 10-21-15 in No. 2 M. C. Agnew, flowing 250 barrels, and the other in section 20-20-15, which will pump about 75 barrels.

Kinnebrew & Ratcliffe have a salt water well in No. 3 Muslow in section 4-20-15 and have abandoned same at about 2,275 feet.

In De Soto parish the Texas Company completed Wemple B-8, flowing 800 barrels in section 14-12-11, and the Gulf Refining Company got a small pumper in E-6 Jenkins in section 14-12-11.

Several new locations have been made during the past week, among them the following:—

The Arkansas Natural Gas Company has an interesting location made for No. 1 Barnett in section 10-21-15 and is building derrick for same.

The Fortuna Oil Company, which is now one of the most progressive companies in the field, has made two new locations this week, both in section 15-21-15, and the Gulf Refining Company has locations made and derricks building for five new wells, one in section 10-21-15 for No. 3 Agnew, one in section 30-21-14 for No. 1 J. S. Noel, Elbert Tyson No. 8 is in section 14-21-15, Watkins No. 8 is a derrick in section 22-21-15, and No. 2 Robert Shaw is rigging up to drill in section 12-21-15.

Kinnebrew & Ratcliff have a location made for No. 5 Heilperin in section 26-21-15; the Lotus Oil Company has location made for No. 3 Rowe-Baird in section 23-21-15, and the Mississippi Oil and Gas Company has the third location made on their Olds lease in section 9-21-15.

The Old Settlers Oil Company is operating extensively in the Pine Island field and is building derrick for the fourteenth well on the Lynn lease in section 12-21-15.

The Prudential Production and Refining Company is rigging up to drill No. 2 Noel in section 7-21-14 and the Ranger Pine Island Oil Company has derrick up for their first test in section 3-20-15.

The Red Line Oil Company has its derrick up for a test in section 9-21-15 in No. 1 Huckaby and the Richardson Oil Company has three wells starting on the Jack Johnson lease in section 24-21-15. No. 1 Johnson is a derrick, No. 2 is drilling at 1,775 feet and No. 3 is rigging up to drill in section 25-21-15.

The Sammies Oil Corporation, under the management of Al Patterson, is one of the most progressive of the new companies entering this territory. This company was successful in getting a producer in its first attempt in section 15-21-15. The well has settled down now to where it will make 500 barrels. Packer is being set in No. 1 Charbonett at 2,325 feet in section 15-21-15; No. 1 Pitts in section 10-21-15 is rigging up to drill; No. 1 Powell is a derrick in section 15-21-15, and location has been made in same section for No. 2 Weiss.

The Republic Oil and Refining Company is drilling out cement plug in No. 1 Sellington in section 28-21-15; the Sun Company is setting packer in No. 1 Will Bradford in section 15-21-15, and the Taylor Oil Company has set 10-inch casing in No. 1 Taylor in section 14-20-15.

The Tex-La Oil and Gas Company is arranging to pump its well on the Caddo Mineral Land lease in section 24-22-14 at 1,335 feet, and the Texana Oil and Gas Company has No. 1 Player drilling at 2,265 feet in section 26-21-15.

Wolfe & Keen are arranging to set 4½-inch casing in No. 1 Lane in section 10-21-15 have a fishing job in No. 2 Lane at 2,100 feet and have derrick up for No. 2 Lane in same section. No. 3 Noel is drilling at 2,120 feet and 6-inch casing is being set in No. 4 Noel in section 13-21-15.

The Big Tom Oil Company has tested its Caddo Levee Board well in section 2-21-15 dry, and will drill deeper. The Banks Oil Company has a showing of oil of about 10 barrels in No. 1 Spell in section 15-21-15 at 2,350 feet and will drill deeper.

Clark, Greer & Richardson are drilling No. 1 Herndon in section 22-21-15 at 2,235 feet and the Jim Clark Oil Company has derrick up for No. 5 Raines in section 22-21-15.

The Fortuna Oil Company is drilling out of the cement plug in No. 1 Hampton in section 15-21-15 and No. 2 Hampton is drilling at 2,150 feet.

Friedman-Rowe et al. have No. 2 Noel drilling at 1,900 feet in section 25-21-15 and No. 3 is down 1,350 feet in the same section. The company has three locations made in sections 25-21-15 and 20-21-14.

The Genuine Oil Company has a derrick built in section 32-21-15 for No. 1 Schumpert; the Greer Oil Company is drilling Bobb Bar at 120 feet in section 32-22-15 and the George Oil Company is setting 6-inch in No. 1 Newby at 2,230 feet.

The Captain Oil Company has a derrick up in section 17-21-15 for No. 1 Waters, the Cass Oil and Gas Company one in section 35-21-15 for No. 1 Gamme and the Lucky Seven Oil Company derrick up for No. 3 Wells in section 10-21-15. The Manila Oil Company is rigging up to drill No. 1 Sibley and the Major Oil Company is drilling at 200 feet in section 17-21-15.

BUTLER COUNTY AND EL DORADO SHOW BIG SLUMP IN CRUDE OUTPUT DURING WEEK

Wichita, Kan., Sept. 25, 1918.

There was a large slump in the Butler county production in the past week, the largest being in the El Dorado district. The pipeline runs for the different districts for the week were as follows:—

	Barrels.
El Dorado	72,000
Augusta	20,000
Outside	19,000
Greenwood county	18,000

The Empire Gas and Fuel Company, which had over 60,000 barrels daily production a few weeks ago, is reported this week as falling below the 50,000-barrel mark. The company's No. 22 on the Enyart lease, in 12-26-4, which came in as a 10,000-barrel well a month ago, is now producing only 250 barrels daily, while a number of other wells show a slight falling off.

Elk County Field.

The Elk county field has been holding the boards in the oil game for the past week with four large gassers brought in on the Dix field, four miles from Elk City. The Sachem Oil Company brought in a gasser on the Brooks farm, in 27-31-13, which is making 15,000,000 feet daily. The Elk Valley Syndicate drilled in a 20,000,000-foot gasser four miles northwest of Elk City, on the Brainerd farm, in 27-31-13, at a depth of 1,340 feet. Geons and associates drilled in No. 1 on the Cox farm, in 27-31-17, Saturday night, which is good for a 15,000,000-foot gasser in sand found at 1,345 feet. This maks the seventh big gas well in section 17, and extends the field half a mile west and south. There are a number of other wells now drilling near the sand, and more large producers are expected in at any time. Acreage near the field has been bringing fancy prices, and the territory will be given a thorough test this fall and winter.

In Wilson county the Preferred Oil and Gas Company has opened a productive territory in advance of production in its test on the Gilmore farm, in the southwest quarter of 21-28-15. The amount of production has not yet been ascertained, but there is no doubt but that it is a well and will open up a large territory to be drilled out.

Important Wells Over the State.

In Bourbon county Allen and associates' No. 1 on the Davis farm, in the northwest quarter of the southeast quarter of 26-23-21, was abandoned at 780 feet. C. & F. Oil Company's No. 1 on the Findlay farm, in the northwest quarter of the southwest quarter of the northwest quarter of 10-24-23, is drilling at 640 feet. P. M. Karns and associates' No. 1 on the Mueller farm, in the southwest quarter of the southeast quarter of the southwest quarter of 2-25-23, is drilling at 650 feet. Ies Oil and Gas Company's No. 1, in 12-25-23, is shut down at 780 feet.

In Chase county the Liberty Oil and Gas Company on the Guthrie farm, in the southwest quarter of the southwest quarter of 25-18-8, is shut down for repairs at 1,280 feet. Wyoming-Montana Development Company, on the Clark farm, in the center of 23-22-7, is shut down for wire line at 2,950 feet.

In Coffee county the Grouch Oil and Gas Company's No. 1 on the Jones farm, in the southwest quarter of the northeast quarter of 1-20-14, is shut down for water at 1,535 feet. The Van Noy well, in the northwest quarter of the southwest quarter of 6-23-15, has been abandoned at 1,648 feet.

In Anderson county Patton and associates on the Stell farm, in the southeast quarter of the northwest quarter of 11-22-19, is fighting a fishing job at 1,260 feet. Helena Oil Company's No. 10 on the Peter Poss farm, in the northeast quarter of the northwest quarter of 11-20-29, is reported drilling at 710 feet. Gold Eagle Oil Company's No. 7 on the Fraker farm, in the southeast quarter of the northwest quarter of 14-20-20, has been abandoned at 710 feet.

In Crawford county Phillips & Smith on the Fowler farm, in the southwest quarter of the southwest quarter of 27-28-21, is drilling at 200 feet. Quinn-Walnut Oil and Gas Company on the Norris farm, in the southwest quarter of the northwest quarter of the northwest quarter of 35-28-21, is a small well in sand found at 445 feet.

In Lincoln county the National Refining Company on the Dudley farm, in 9-11-8, is drilling at 2,950 feet.

In Kiowa county the Pratt Oil and Gas Company on the Birkett farm, in 25-30-17, is fishing for tools at 327 feet.

In Dickinson county the Atlas Petroleum Company on the county poor farm, in the northeast quarter of the northeast quarter of 11-13-2, is shut down at 2,860 feet and will probably be abandoned.

Completions for Week.

The following completions were made in the Butler county field during the past week:—Empire Gas and Fuel Company's No. 22 on the Koogler farm, in the southeast quarter of 19-26-5, topped the sand at 2,350 feet, completed at 2,425 feet, and is a 50-barrel well. Same on the Bloir farm, in the northwest corner of the northwest quarter of 13-26-4, topped the sand at 2,365 feet, completed at 2,406 feet, and is a 400-barrel well. Same on the Shriver No. 8, in the southeast quarter of 3-26-4, topped the sand at 2,387 feet, completed at 2,440 feet, and is a 75-barrel well. Same on the Shriver No. 7, in the southeast quarter of 3-26-4, topped the sand at 2,391 feet, completed at 2,445 feet, and is a 90-barrel well. Same on the Wilson No. 109, in the southwest quarter of 9-26-5, topped the sand at 2,431 feet, completed at 2,450 feet, and is a 60-barrel well.

Caldwell and associates' No. 1 on the Holom farm, in the southeast corner of the northeast of the northeast of 24-26-5, topped the sand at 2,707 feet, completed at 2,753 feet, and is a 25-barrel well.

Monitor Oil and Gas Company's No. 4 on the Wilford farm, in the center of the south line of the southeast quarter of 6-29-4, topped the sand at 2,577 feet, completed at 2,583 feet, and is a 180-barrel well.

Magnolia Petroleum Company on the Koegler No. 6, in the northwest corner of the northwest quarter of 25-26-4, topped the sand at 2,665 feet, completed at 2,685 feet, and is a 50-barrel well. Same company's No. 7 in the southwest quarter of 26-26-4 topped the sand at 2,676 feet and is a 200-barrel well.

Patton-Dickinson-Bradford on the Richards No. 19, in the southwest corner of the northeast quarter of 24-26-4, topped the sand at 2,660 feet, and is a 150-barrel well.

A. J. Hyde and associates on the Sluss No. 1, in the northwest corner of the southwest quarter of 25-26-5, topped the sand at 2,735 feet, completed at 2,748 feet, and is a 75-barrel well.

Garden & Smith on the Bush No. 3, in 24-29-5, topped the sand at 2,875 feet and is a 50-barrel well.

The Carter Oil Company's No. 48 on the Porter farm, in the northwest quarter of 1-26-4, is a 300,000-foot gasser in sand found at 1,190 feet.

Abandonments.

The Texas Oil Company on the Bush No. 3, in the southwest corner of the southeast quarter of 13-29-5, is dry and abandoned at 2,900 feet.

The Inter-Sea on the Powers, in the northwest corner of the southwest quarter of 32-24-7, is dry and abandoned at 2,800 feet.

The Empire Gas and Fuel Company has abandoned a location recently made in the center of the northeast forty of the southwest quarter of 13-29-3.

The Empire Gas and Fuel Company on the Peacock farm, in the northwest quarter of the southwest quarter of 36-32-4, Cowley county, is dry and abandoned at 3,425 feet.

RECENT COMPLETIONS IN HIGH GRADE FIELDS AVERAGE MORE THAN 40 BARRELS TO WELL

Pittsburgh, Pa., Sept. 28, 1918.

A review of the high grade petroleum fields, comprising Southern New York, Pennsylvania, West Virginia, Southeastern, Central and Northwestern Ohio, Indiana, Illinois and Kentucky, for the week shows but little change in the development of the various fields, due to the fact that the previous report covered a two-weeks' period. The trade is busier than at any period of the year, due to the bountiful rains that are now supplying the water for drilling purposes in all fields, and the scarcity of water has held up development work for several months, and from now on more wells will be finished.

The week promises to be a most prolific one when conditions in the oil end of the country are taken under consideration, and in addition to the big things to pull off and in store for the oil men, there is always a chance that something unexpected may happen, and that it may be as unexpected as possible, as, for instance, a declaration that it has been decided that because gasoline is scarce and Sunday joy riding must be stopped east of the Mississippi River, it will necessarily follow that the price will be cut. Why the territory east of the big river was chosen is not really clear to the residents of that section of the good old U. S., and what is more, the people east of the big river can not clearly understand why the people west of this stream are allowed to joy ride on Sunday.

An old-line oil man says in particular about the week's doings that the most important news of all, however, will be the final effect of the new tariff law that is in its final stages, and will mean more than can be estimated as to its provisions with reference to oil.

Another important thing is the exemption for oil field workers, now much too badly needed, in all petroleum fields, whereby contractors will ask for exemption for competent drillers and tool dressers, who will keep things moving to fill the new pipelines now being planned to the Gulf as well as to Chicago from the mid-continent fields. The Chicago line is being constructed by the Sinclair interests in order to assist in moving oil towards the Eastern seaboard. The line to the Gulf will likely be put in by the Prairie Oil and Gas Company, with an extensive refining plant at the terminus of the line, which will afford a better outlet to tidewater and will strengthen the already good facilities for handling oil on the south coast.

Another important feature that is discussed but little by the press, namely the great tax on oil property that changes hands. If this feature is eliminated it will mean that much property that is developed will be sold at once, and this is a good or bad feature, just as one happens to look at it.

Wildcat Work.

Just now there is an immense amount of wildcat work going on in Kentucky and Tennessee, in fact, throughout Northwestern Alabama, and if allowed will continue on down through the southeastern portion of Mississippi to the Gulf of Mexico. The Tennokla Oil and Gas Company, a subsidiary of the Tuxbury Oil and Refining Corporation, of Nassau street, New York, is starting a series of very important test wells through the central portion of Tennessee, where it has extensive leases to develop. The work being done is under the supervision of H. J. Rickabaugh, a thoroughly posted man in the industry, who has formerly made his headquarters at Tulsa, Okla., but now at Nashville, Tenn., so as to be in close touch with development work as it goes along. This company, it is reported, holds leases on close to a million acres and has shipped by freight a machine that will be erected and test out the territory in Dickson county. This is only one of many companies that are more than willing to go out and wildcat to find a supply of oil for war purposes.

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week made runs of oil from the following fields in Kentucky, where its pipelines reach:—

Field.	Runs. Barrels.
Big Sinking	32,657.74
Pilot	16,143.25
Ravenna	15,404.69
Fitchburg	11,667.04
Ross Creek	5,422.31
Zachariah	4,149.75
Ragland	1,308.03
Cooper	904.61
Steubenville	901.28
Beaver Creek	621.32
Parmleysville	567.52
Wagersville	547.95
Stillwater	509.50
Busseyville	442.12
Denny	358.64
Cannel City	297.44
Fallsburg	292.34
Campton	161.25
Total	92,377.68
Daily average	15,396.28

Kentucky Fields.

Not since oil was discovered back in the early '80s has there been so much enthusiasm in Kentucky in oil development work as at the present time, and if weather conditions permit, and nothing happens to come about stop operations, a great many more wells will be finished before the close of the year, and many new producing fields will be found, for the festive wildcatter is working overtime in many parts of the State that were never before touched by the drill. The wildcatter is a necessity in the petroleum business, for without him no new fields would be discovered. The wildcatter is the one that takes the long chances in the producing end of the oil game, and it is usually a hundred to one-shot that a well will be dry, but they are game and keep on moving from place to place until they are successful in developing something new.

The installing of pipelines in the western division of Kentucky means a great deal for that field that has been dormant for the past three years, as the Scottsville field, in Allen county, was one of the early fields to be developed, or was drilled about the time the first new work a few years ago was started at Irvine, in the eastern part of the State. There have been over 400 wells drilled in Allen county, and only a small amount of the product has found its way to market, and that was by tank cars. Some went to Lawrenceville, Ill., and the balance to a small refinery at Nashville, but now that the Indian Refining Company's line from the Gainesville end of the county is finished and running oil, there will be an outlet for that rich pool, which has proven the richest yet found in the State. Another pipeline has also been finished from the Gainesville field to Bowling Green, and both lines may be able to handle the present output of that pool. The Indian Company is laying gathering lines to other portions of Allen county, where wells have been drilled, and it will only be a short time until the wells of both Allen and Warren county are all connected to a marketing line.

In the eastern part of the State the Cumberland Pipeline Company is busy laying additional gathering lines to wells throughout Lee county, and contemplates a line into Jackson and Breathitt counties. There is some possibility of a line being put into Knox county, where considerable development work is being done.

Breathitt County.

Many new wells are now under way, and most of them are what are called wildcats, being located far in advance of production. The Fred Miles Oil Company has a well under way on the Pelfrey tract, on Boone Fork of Frozen Creek, at the mouth of Glory branch. The Oliver Oil Company has started a test well on the Miles Back tract, at the mouth of Quicksand Creek, about three miles south of Jackson, the county seat.

The Atlantic Oil and Producing Company scored a dry hole on the Arch Crawford tract, on the upper branch of Twin Creek, but dry holes condemn but a small area around the well. The Big Bird Oil Company is making preparations to start a series of test wells about twelve miles east of Jackson, and on Wolfe Creek. The first test will be drilled on the H. F. Davis tract.

The Sun River Oil Company is drilling a well on the Z. T. Hurst tract, and another on the S. H. Hurst tract, both on Boone Fork of Frozen Creek, as well as drilling No. 3 on the Winterbotham tract, a short distance north of Van Cleve. This company's No. 1 well on this tract made a very good showing and will make a paying pumper. No. 2 was only drilled to the top of the pay sand and will not be drilled in until a pipeline is put in to handle the output.

The Ruby Oil Company found a showing at a depth of 1,400 feet on the Sam Patton tract, fifteen miles east of Jackson, but is going deeper to test the lower formations. F. B. Jackson & Co. are at work on a test on the Kelley McGuire tract, a couple of miles southeast of Van Cleve. The Wildgoose Oil Company is drilling a test on the Elijah Hurst tract at Elkatawa, and nearly three miles west of Jackson. The W. A. Jewell Oil Company has reached a depth of 2,150 feet at its test on the Goff tract, but continue drilling. The W. P. Williams Corporation is drilling a test on the Pat Maloney tract, near Van Cleve, and has a fishing job at a test on the Bud Dawson tract, on Mill Creek.

All Over Kentucky.

The Hopewell Petroleum Company is installing a new pumping plant on its Shearer tract, in Lee county, that will be capable of handling at least twenty wells.

The Southern Oil Company is moving drilling machines to the J. E. King and Laura Lane tracts, in Lee county, and will start drilling on both wells at once.

News from Pulaski county is that the Daniel Boone Oil Company has its pipeline from the Buck Creek field, in Lincoln county, to Waynesburg about finished, and will soon be running oil from the wells, of which there are close to thirty, to the loading rack along the railroad siding. The oil will be shipped to Somerset by tank cars to the Cumberland Pipeline Company. The field has a production of close to 300 barrels a day. The Coast, Curtis & Wands Oil Company, of Olean, N. Y., is starting a wildcat on the McGahan tract, at the junction of Fishing and Clifty creeks, three miles northwest of Somerset, in Pulaski county. The Carnahan Sheet and Tin Plate Company, of Canton, Ohio, is getting ready to drill a test well on the Widow McGuhan tract, east about three miles from Somerset, on Pitman Creek.

The Big Dippey Oil and Gas Company's well on the Mrs. Woods Jewell tract, near Gainesville, in the northern part of Allen county, when given a shot flowed so furiously that it caught fire, consuming the drilling apparatus, and seriously burning the driller, Mr. James Wiles, of Bowling Green.

D. N. Baker, a well-known oil operator in the Kentucky field, has purchased leases on the Kidd and Banks tract of 90 and 63 acres and a one-thirty-second royalty interest on a 60-acre tract in the same vicinity in Breathitt county.

The three-inch pipeline of the Beattyville Refining Company, which runs from the new refinery at Beattyville up Crystal Creek to the Bald Rock Fork section of Lee county, is rapidly nearing completion, and as soon as oil is run through the line the refinery will make its first still run. The refinery will have a capacity of 1,000 barrels, and storage facilities are being installed at the plant.

The Nena Refining Company will soon have its plant located near Camden Junction, in Powell county, and pipelines running into Lee county are already set, and the refinery is already equipped to receive oil, and has a 1,000-barrel-a-day capacity.

The Trinity Oil Company of Winchester, Ky., has increased its capital from $50,000 to $100,000.

The Cabin Creek Oil and Gas Company of Maysville, capital, $25,000, has been incorporated by G. W. Ginther, A. D. Cole and F. H. Perry.

The Blackburn Oil and Gas Company of Lexington, Ky., capital $25,000, is a new incorporation by Charles Land, W. R. Bowman, E. W. Blackburn and J. E. Bassett.

The Cromer Oil and Gas Drilling Company of Caney, Ky., capital, $75,000, is headed by Elisha Brown, Enoch Cromer and John H. Hallsback.

The Giant Mineral Company, Marion, Ky., capital $50,000, is a new one by J. E. Morton, J. B. Riley and C. S. Dunn.

Late Kentucky Wells.

During the week a total of 90 wells was finished in the Kentucky fields and equally as many or more are now within a few days drilling of the depths in which oil is found, and the week's runs indicate that production is on the increase, and when the runs from the western section of the State are added weekly to the reports of the runs by the Cumberland Pipeline Company in Eastern Kentucky the week's reports will show far above a total of 100,000 barrels a week. The wells for the week were distributed by the various counties as follows:—

LEE COUNTY.

Carter Oil Company's Nos. 6, 7 and 8 Pendegast tract, 200 barrels each, and No. 9, same tract, 300 barrels.

Petroleum Exploration Company's Nos. 205, 207 and 208 Pruitt-Miller tract, 50, 75 and 100 barrels respectively.

Rex Oil and Gas Company, No. 4 Bryant tract, and No. 6 Williams tract, 150 barrels.

Lee A. Watson, No. 3 James Wells tract, 50 barrels.

National Refining Company, Nos. 1, 2 and 3 Flahaven tract, 100, 100 and 200 barrels.

Eastern Gulf Oil Company, Nos. 2, 3 and 4 Green Grose tract, 100 barrels each.

Old Dominion Oil Company, Nos. 3 and 4 Crouch tract, 50 and 75 barrels, and No. 4 Comet tract, 40 barrels.

Manamoth Producing Company, No. 1 Thomas tract, 5 barrels.

Hardin Able Oil Company, Nos. 2 and 3 Arvin heirs tract, 20 and 25 barrels.

Lexington Oil Company, No. 1 Durban tract, 25 barrels.

Cumberland Petroleum Company, No. 4 Sparks tract, 15 barrels.

Southwestern Petroleum Company, No. 1 Kincaid tract, 75 barrels.

Tom Corwin Oil and Gas Company, No. 1 Bryant tract, 50 barrels.

Veltch & Co., No. 2 Davis tract, 10 barrels.

Kentucky Kernel Oil Company, No. 5 Messer tract, 50 barrels.

Ohio Oil Company, No. 2 Olinger tract, 25 barrels.

Dr. E. G. Mann & Co., No. 1 Horn tract, 100 barrels.

Hopewell Petroleum Company, No. 13 Shearer tract, 35 barrels.

Carl K. Dresser, No. 7 Noland tract, 20 barrels.

Hudson & Collins, No. 4 Sloan tract, 100 barrels.

Ohio Oil Company, No. 5 Evelythe tract, 200 barrels.

Southern Oil Company, No. 4 Dr. Williams tract, 40 barrels.

Superior Oil Company, No. 1 Curry tract, 50 barrels.

ESTILL COUNTY.

May Day Oil Company, Nos. 1 and 2 Harris tract, 50 barrels each.

Louisville Oil and Development Company, No. 1 Harris tract, 40 barrels.

C. F. Dickerson & Co., No. 2 Nie tract, 20 barrels.

Lowther Oil Company, No. 4 Flynn tract, 25 barrels.

Ohio Oil Company, No. 6 Adams tract, dry, and No. 7, 5 barrels.

Ohio Fuel Oil Company, No. 4 Frazier tract, 5 barrels.

Bent Hickory Oil Company, Nos. 9 and 10 Roberts tract 25 and 50 barrels.

Carmon Oil Company, No. 2 Flynn tract, 40 barrels.

Hoffman Oil Company of Kentucky, No. 8 Thomas heirs tract, 20 barrels.

Kentucky River Oil Company, No. 9 Brinegar tract, 5 barrels.

Arrowhead Oil Company Nos. 1, 2, 3, 4, 5, 6 and 7 Profit tract, 25 barrels each.

POWELL COUNTY.

Pat. J. White, No. 63 Ashley tact, 5 barrels.

Ohio Oil Company, No. 8 Brandenburg tract, 5 barrels, and No. 6 Roberts tract, 5 barrels.

Meldren & Keating, Nos. 17 and 18 Watson tract, 10 and 5 barrels.

Alex. Summers, No. 6 McIntosh tract, 5 barrels.

ALLEN COUNTY.

Big Dippey Oil and Gas Company, No. 5 Jewell tract, about 100 barrels.

Peacock, Jamieson & Co., No. 1 Edmonds tract, 50 barrels.

Paul H. Davis & Co., No. 1 Motley tract, 50 barrels.

WOLFE COUNTY.

Marchmont Oil Company, No. 1 Wild Bush heirs tract, 25 barrels.

McCombs Oil Company, Nos. 9 and 10 Adams heirs tract, 50 barrels each.

PULASKI COUNTY.

Oklahoma Oil and Gas Company, Nos. 4 and 5 Sievers tract, 10 barrels each.

Wood Oil Company, No. 1 Wesley tract, 1,000,000 feet gas.

WAYNE COUNTY.

Miller & Hogue, No. 2 Bell tract, 10 barrels.

JACKSON COUNTY.

Williams & Raydure, No. 2 Isaac tract, 10 barrels.

Ohio Cities Gas Company, No. 1 Turkey Foot Lumber tract, 500,000 feet gas.

FLOYD COUNTY.

A. B. Brode & Son, No. 1 Howard tract, 5 barrels.

Penngrade Oil Company, No. 1 Estep tract, 1,000,000 feet gas.

KNOTT COUNTY.

Kentucky Producers and Refiners' Company, No. 1 Hall tract, 40 barrels.

TENNESSEE.

After years of waiting, it looks as though Tennessee would come into its own as a large producing petroleum field. The great demand for crude oil has brought about a wonderful change in the industry, and the prices of the product is such that oil men are now willing to take chances of developing new and prolific fields. Many years ago operators from the Eastern and Northern States invested in oil well drilling in the State, but the work was done in a haphazard way and the ultimate result is that a mint of money was invested and lost. Thousands upon thousands of acres of land have been leased over the state, and there is something doing now that will encourage others holding leases to get busy and test out the vast areas held under lease. Much capital is now being invested over the State, and while no town or city in the State may ever be a headquarters for the oil men, the thing is settled at this time, and that is that at present Bowling Green is the logical headquarters of the Western Kentucky and Western Tennessee fields, although later on Nashville or Louisville may make a bid for it. Advice from Bowling Green, Ky., is that C. W. Deming, of Tulsa, Okla., has arrived at Bowling Green from the New York office of the Tuxbury Oil and Refining Corporation and opened headquarters for the buying of supplies for the development work now being started by that company in Tennessee. One complete string of tools, including machine, was shipped to a location near Southside, Montgomery county, and another complete string and machine was bought and shipped to a location near Cumberland Furnace, Dickson county. Four more outfits are being purchased, one to go to a location between Cross Plains and Cedar Grove, in the northeast corner of Robertson county; one between Adams and Cedar Hill, in the Northwest corner of the same county; one on a location near Tennessee City, Dickson county, and one about seven miles south of Waverly, in Humphries county, the six wells to be drilled by the company and its associates. Manager Morrison, of the Park City Machine Works, of Bowling Green, is now on a trip East buying casing and drive pipe for these wells, and wires that he is shipping and getting enough to handle them.

A. J. Rickamaugh, for the past nine years in charge of the Refining interests in the mid-continent field, is a drilling superintendent and well known oil man in Dickson, with Thomas Rooney, formerly of the Kentucky field, with Contractor Moreland, of Butler, Pa., as his assistant. Locations have been made by Hager, Bates & Rhoues, of Tulsa, and Lexington, Ky., and Prof. Robert T. Hill, the well-known geologist of Texas, and formerly of the United States Geological Survey, for the wells to be drilled. Scientific analysis of all sand cuttings and daily reports of the log of the drilling, together with personal supervision of drilling the three probable sands, will be under the immediate direction of Mr. E. C. Rhoues, of the Petroleum Geologists and Engineers, Hager & Rhoues of Tulsa and Lexington.

The basis of all work will be geological reports and the handling of all development work will be under the direction of men selected in the practical experience of twelve years of actual drilling in the mid-continent fields, and experts on handling wells to secure the maximum efficiency. Nothing will be left to impossible chance, and every effort will be made to open up what geologists approve as one of the greatest prospective shallow and deep sand oil fields yet undeveloped.

The above, in brief, tells the story of the culmination of one of the greatest undertakings ever conceived and carried to a point of drilling execution in the oil fields of the United States by interests outside the big companies.

The area under lease covers 500,000 acres, and extends over a territory about 150 miles long and fifteen miles wide, embracing what the geologists designated as the western highland rim of the great Cincinnati anticline, and embraces what the geologists claim is the southern extension of the Indiana, Ohio and Kentucky oil fields, down through Tennessee and on through Northern Alabama and Southeastern Mississippi to the Gulf of Mexico, thence across the Gulf to the well-known Tampico fields of Mexico, the oils of Tennessee being a much higher gravity than that across the Gulf in Mexico. The deal in its entirety has covered over two years' work of leasing, during which thirty-five expert lease men were almost constantly employed and a large number of geologists and detail men. Over 5,000 leases have been taken, and the clerical work involved in the handling of this has been enormous. The results expected to be obtained from this work is the prospective opening of what is believed to be a practical duplicate of the Brownwood (Texas) shallow sand and Ranger deep sand field.

Principal owners in the 980,000 acres are the Tuxbury Oil and Refining Corporation and the Southwest Petroleum Company, both Delaware corporations, with headquarters in New York, and the Tennokia Oil and Gas Company and the Humphries Oil and Gas Company, with headquarters at Nashville, Tenn., and Bowling Green, Ky.

The shallow sand area is believed by geologists to extend from the extreme northeastern part of Robinson county, in a curve down through Montgomery, Dickson and Humphries county, where detail work has been done by readings of exposures. Formations are very plain on the east side of the Tennessee River, making the geological deductions easy. They are supposed to exist on the west side of the Tennessee River, but are covered by the dip of the strata. In the area described there are supposed to be three sands—400, 600 and 800 to 1,000 feet deep. From the northern boundary of Perry county south to the Alabama line through Perry county, Wayne and Hardin counties, is supposed to be two sands in what is known as the deep sand area, and these two sands are supposed to be at depths of 1,200 to 1,500 feet and 1,500 to 2,000 feet. Numerous structures and folds are visible throughout the entire shallow and deep sand areas.

There is one shallow sand structure that starts at the Seven-Mile Ferry on the Cumberland River, about five miles southeast of Clarksville, Montgomery county, Tennessee, which has been worked out in detail by geologists for seventeen miles down through Montgomery and Dickson counties, and ends about seven miles northwest of Charlotte, Dickson county. The Tennessee River crossects a structure for an average of every five miles for a north and south length of about 100 miles in a north and south direction between Johnsonville, Humphries county and the Alabama line. Geological work on this entire territory has been in force almost continuously for about one year, and three oil field geological firms have been employed in the same by various parties interested.

Tennessee, like Kentucky produced oil many years ago, and some of the reports show as far back as 1825-1866, and drilling resulted in good shallow wells as late as the year 1915. Recent geological investigations of the locations have disclosed the fact that in every instance wells were drilled off structures, yet the fact remains that they did produce oil. This is especially true of the seven wells on Jones Creek, Dickson county, and also of the gas well at Iron City, Wayne county, down on the Alabama line. All structures have been leased under five and ten-year leases, with 5 and 10-cent annual rentals and a one-eighth royalty to the landowner.

The territory was first brought to the attention of the present lessor by Prof. Robert T. Hill in 1910, and the oil situation not being propitious at that time, nothing came of it. When the oil demand became acute in 1916, the parties interested secured Professor Hill to go over the same again, and he then confirmed his first reconnaissance trip, made in 1910. A leasing campaign was then inaugurated, and when it progressed far enough the detail geological work was started and kept up until all the desired territory had been leased and sufficient locations mapped out to warrant a thorough testing of both the shallow and deep sand areas. This is the stage the proposition is now in, and a large amount of money is now in process of being spent in actual drilling.

Supply bases will be opened at Bowling Green, Ky., and Nashville, Tenn., and a field office for the shallow sand development has been established at Dickson, Tenn., and from that point any one desiring to visit the drilling now going on at Cumberland Furnace and Southside can find good pike roads and good hotel accommodations.

It is worthy to note that Professor Hill, who first called attention of oil men to this prospective field was in 1902 with the Texas State Geological Survey, and at that time published a map and pamphlet which is still issued by the Franklin Institute of Philadelphia, in which is outlined what is now the famous Ranger (Texas) field. The Ranger field was dormant for sixteen years thereafter, and this new field has been dormant since first reported by Professor Hill in 1910. The same shallow well conditions that exist in the Brownwood part of the North Central Texas field exists now in the old shallow Tennessee field.

Topographically, the field looks very much like the Cushing (Oklahoma) field, the Tennessee River and the hills, valleys and general appearance of the country reminding one of the Cimmarron River section, where the big Cushing pool lies. Should the hopes of the oil men and the work of the many competent geologists and practical oil men they have employed be realized, then Western Tennessee is in for one period of vast development, as ample finances are assured to continue any work that the test wells now being drilled should warrant. The companies will not stop with the six wells mentioned, but expect to drill at least twenty tests.

A telegram from Clarksville, Tenn., announces that a drilling outfit has been delivered at Lone Oak, and will be set up on a farm near Tincup Spring, a mile north of Southside, which is regarded as a most promising spot, in Dickson county; also another to be set up close to Cumberland Furnace, in the same county.

PENNSYLVANIA.

Few wells are being finished in the old Pennsylvania fields, although quite a number of wells are under process of drilling and will soon be drilled in. The wells for the week were by counties as follows:—

GREENE COUNTY.

Manufacturers' Light and Heat Company, No. 3 Moore tract, 50 barrels, and No. 1 Moore tract, 3,000,000 feet gas.

Cochran & Funk, No. 3 Strope heirs tract, 5 barrels.

BEAVER COUNTY.

C. M. Hughes, No. 2 Shane tract, 2 barrels, and No. 1 Ingraham tract, 250,000 feet gas.

BUTLER COUNTY.

Andrew Ammer, No. 1 Ammer tract, 2 barrels.

WEST VIRGINIA.

The work in the West Virginia field took an awful drop from the previous report, and the Southeastern Ohio field along with Kentucky took the lead, although the Little Mountain State showed a respectful number of wells at that, and a large amount of new work is springing up in the southwestern part of the State, up close to the Kentucky line, also in Kanawha county, in the Cabin Creek district. The wells for the week were by counties as follows:—

DODDRIDGE COUNTY.

Pittsburgh and West Virginia Gas Company Nos. 1 and 2 Lesson tract, and No. 3 Maxwell tract produced 3,000,000 feet of gas each.

Hope Gas Company, No. 1 Adams tract, produced 3,000,000 feet gas; No. 1 Maxwell tract, 2,500,000 feet, and No. 1 Walton tract, 2,000,000 feet.

The Philadelphia Company, No. 1 Ellefrit tract, produced 3,000,000 feet gas and No. 5 Henry tract produced 25 barrels oil.

The Columbian Carbon Company, No. 20 Low Maxwell tract, 3,000,000 feet gas.

Carnegie Gas Company, No. 23 Lem Maxwell tract, pumped 5 barrels oil.

Ernest Randolph & Co., No. 3 Eddy tract, 50 barrels.

MONONGALIA COUNTY.

Hope Gas Company, No. 1 Foster tract, and No. 1 Wright tract, 4,000,000 feet gas each.

South Penn Oil Company, No. 13 Wright tract, 6 barrels.

WOOD COUNTY.

Parson-Sweeney Oil Company, No. 8 Walker tract, 15 barrels.

South Penn Oil Company, No. 8 Newbanks tract, 10 barrels.

Clark & Hines, No. 43 Volcano tract, 5 barrels.

Piersol Oil Company, No. 7 Piersol tract, 2 barrels.

WETZEL COUNTY.

Carnegie Gas Company, No. 1 Freeland tract, 1,000,000 cubic feet of gas; No. 1 Caleb Freeland tract, 2,500,000 cubic feet of gas.

South Penn Oil Company, No. 3 Price tract, 10 barrels.

RITCHIE COUNTY.

Ruth & Strong, No. 10 Strong tract, 10 barrels.

R. G. Gillespie, No. 4 Simmons tract, 5 barrels.

Ridgeway Oil Company, No. 1 Barnard tract, 2,000,000 cubic feet of gas.

HARRISON COUNTY.

South Penn Oil Company, No. 9 Krenn tract; No. 3 Wetzel heirs tract, 5 barrels each.

LINCOLN COUNTY.

South Penn Oil Company, No. 2 Horse Creek tract, 2 barrels.

Carter Oil Company, No. 1 Midskiff tract, 2 barrels.

MARION COUNTY.

South Penn Oil Company, No. 1 Musgrave tract, 5 barrels.

Manufacturers' Light and Heat Company, No 1 Brummage tract, 1,000,000 cubic feet of gas.

ROANE COUNTY.

Republic Oil and Gas Company, No. 19 Hively tract, 10 barrels.

MARSHALL COUNTY.

Carnegie Gas Company, No. 3 Williams tract, 1,500,000 cubic feet of gas.

SOUTHEASTERN OHIO.

The bulk of the wells finished in Southeastern-Central Ohio were centered in what is known as the gas territory in the Central Ohio area, and many of them were gas wells of fair volume. There were no oil wells in the select class in the field during the week, and the wells were distributed by counties as follows:—

PERRY COUNTY.

Carter Oil Company, No. 5 Mosier tract, 50 barrels; No. 1 Moore tract, 10 barrels.

R. G. Hawkins & Co., Nos. 9 and 10 Lett tract, 3 barrels each.

Ruth & Strong, Nos. 16 and 17 Northwestern Coal Company tract, 5 and 3 barrels.

Keller, Marshall & Co., No. 5 Denman tract, 5 barrels.

Heisey Gas Company, No. 2 Trevenger tract, 500,000 cubic feet of gas.

WAYNE COUNTY.

Logan Gas Company, No. 1 Lutz tract, 2,-

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000,000 cubic feet of gas; No. 1 Muir tract, 15 barrels of oil.

Ohio Oil Company, No. 13 Wayne County Infirmary tract, 20 barrels.

Madina Gas and Fuel Company, No. 2 Brown tract, 1,500,000 cubic feet of gas.

Charles Curry & Co., No. 5 Beeson tract, 40 barrels.

Ewing & Co., No. 5 Fry tract, 20 barrels.

MEDINA COUNTY.

Logan Gas Company, No. 1 Kingsbury tract, 3,000,000 cubic feet of gas; No. 1 Myers tract, 2,500,000 cubic feet of gas.

Ohio Fuel Supply Company, No. 3 Carpenter tract, 2,750,000 cubic feet of gas.

NOBLE COUNTY.

F. R. Hazard & Co., No. 4 Miller tract, 15 barrels.

Felix Gerst & Co., No. 4 Gerst tract, 20 barrels.

C. E. Hammond & Co., No. 4 Miller tract 6 barrels.

CUYAHOGA COUNTY.

Logan Gas Company, No. 1 Mallie tract, 2,500,000 cubic feet of gas; No. 1 Hills tract, 3,000,000 cubic feet of gas.

East Ohio Gas Company, No. 1 Barnes tract, 4,000,000 cubic feet of gas.

HOCKING COUNTY.

Spicer Oil and Gas Company, No. 1 Spicer tract, 75 barrels.

Cline & Garrett, No. 2 Dawley tract, 50 barrels.

VINTON COUNTY.

Ohio Fuel Supply Company, No. 1 Wallace tract, 3,500,000 cubic feet of gas.

RICHLAND COUNTY.

Logan Gas Company, No. 3 Applegate tract, 2,000,000 cubic feet of gas.

Ohio Fuel Supply Company, No. 2 Snyder tract, 2,000,000 cubic feet of gas.

TUSCARAWAS COUNTY.

Leesville Oil and Gas Company, No. 1 Liggett tract, 1,000,000 cubic feet of gas.

BELMONT COUNTY.

Ernest Ferguson & Co., No. 1 McHenry tract, 10 barrels.

MONROE COUNTY.

Shaffer & Co., No. 1 West tract, 3 barrels.

MORGAN COUNTY.

E. W. Pitts, No. 12 Dougan tract, 2 barrels.

LORAIN COUNTY.

Ohio Fuel Supply Company, No. 1 Killipp tract, 300,000 cubic feet of gas.

KNOX COUNTY.

Ohio Fuel Supply Company, No. 1 Frasier tract, 1,000,000 cubic feet of gas.

NORTHWESTERN OHIO.

Five finished wells were the sum total of the wells in Northwestern Ohio for the week, and three of them were in Hancock county. The wells were by counties as follows:—

HANCOCK COUNTY.

Ewing & Montgomery, No. 3 Deeds tract, 40 barrels.

J. M. Steen & Co., No. 1 Foltz tract, 25 barrels.

Ohio Oil Company, No. 4 Steiner tract, 25 barrels.

WOOD COUNTY.

Co-Operative Oil and Refining Company, No. 1 Tarr tract, 5 barrels.

VAN WERT COUNTY.

W. L. Parmenter, No. 8 Richards tract, 5 barrels.

INDIANA-ILLINOIS.

The Indiana field failed to report any wells finished during the week, although there are about as many wells drilling as in either Illinois or Northwestern Ohio, but none of them happened to get deep enough to strike the petroleum product. In the Illinois field a mixture of small pumpers, fair wells and dry holes were the result for the week, in which there were thirteen finished, and they were by counties as follows:—

CRAWFORD COUNTY.

Charles Grace, No. 1 Rhine tract, 100 barrels.

James Pease & Co., No. 6 Highsmith tract, 75 barrels.

Kentucky Petroleum Company, No. 1 Lackey tract, 10 barrels.

Watson Oil Company, No. 4 Newlin tract, 10 barrels.

Wilson Oil Company, No. 4 Wilson tract, 5 barrels.

American Oil Development Company, No. 2 Dickerson tract, 5 barrels.

Ohio Oil Company, No. 21 Burner tract, 5 barrels; No. 9 Purcell tract, 1,000,000 cubic feet of gas.

LAWRENCE COUNTY.

Ohio Oil Company, No. 19 Gillespie tract, 160 barrels; No. 77 Perry King tract, 10 barrels.

Griggs, Henley & Co., No. 7 Seed tract, 10 barrels.

CLINTON COUNTY.

Southern Gas Company, No. 6 Hofsommer tract, 20 barrels.

WEEK'S WORK.

The finished wells for the week were distributed by fields as follows:—

Field.	Comp.	Prod.	Gas.	Dry
Pennsylvania	9	50	2	3
West Virginia	34	152	17	2
S. E. Ohio	50	355	19	12
N. W. Ohio	5	100	..	..
Illinois	13	410	1	..
Kentucky	90	4,100	5	10
Totals	201	5,176	44	29

The above average for the petroleum wells for the week is just a small per cent. above 40 barrels to the well, which is a remarkable average for practically what is termed old territory.

DISTRIBUTION.

The above wells were distributed by counties and districts in each field as follows:—

Pennsylvania—Greene, 4 wells, 1 dry, 1 gas, 55 barrels; Beaver, 2 wells, 2 barrels, 1 gas; Allegheny, 2 dry holes; Butler, 1 well, 2 barrels.

West Virginia—Doddridge, 11 wells, 8 gas, 80 barrels; Monongalia, 3 wells, 2 gas, 6 barrels; Wood, 4 wells, 27 barrels; Wetzel, 4 wells, 2 gas, 1 dry, 10 barrels; Ritchie, 4 wells, 1 dry 2 gas, 5 barrels; Harrison, 2 wells, 10 barrels; Lincoln, 2 wells, 4 barrels; Marion, 2 gas wells; Roane, 1 well, 10 barrels; Marshall, 1 gas well.

Southeastern Ohio—Perry, 12 wells, 1 dry, 4 gas, 79 barrels; Wayne, 7 wells, 3 gas, 95 barrels; Medina, 6 wells, 3 dry, 3 gas; Noble, 4 wells, 1 dry, 41 barrels; Cuyahoga, 3 gas wells; Hocking, 2 wells, 125 barrels; Ashland, 3 dry; Vinton, 2 wells, 1 dry, 1 gas; Richland, 2 gas wells; Tuscarawas, 2 wells, 1 dry, 1 gas; Belmont, 1 well, 10 barrels; Monroe, 1 well, 3 barrels; Morgan, 1 well, 2 barrels; Lorain and Knox, 1 gas well each; Washington and Fairfield, 1 dry hole each.

Northwestern Ohio—Hancock, 3 wells, 90 barrels; Wood, 1 well, 5 barrels; Van Wert, 1 well, 5 barrels.

Illinois—Crawford, 9 wells, 2 dry, 1 gas, 210 barrels; Lawrence, 3 wells, 180 barrels; Clinton, 1 well, 20 barrels.

Kentucky—Lee, 37 wells, 1 dry, 3,135 barrels; Estill, 23 wells, 3 dry, 520 barrels; Powell, 8 wells, 2 dry, 35 barrels; Allen, 4 wells, 1 gas, 200 barrels; Wolfe, 3 wells, 150 barrels; Pulaski, 4 wells, 1 dry, 1 gas, 20 barrels; Wayne 3 wells, 2 dry, 10 barrels; Jackson, 3 wells 1 gas, 15 barrels; Floyd, 2 wells, 1 gas, 5 barrels; Knott, 1 well, 40 barrels; Grayson, 1 dry hole; Breathitt, 1 gas well.

DEVELOPMENT IN W. CANADA PROGRESSING DESPITE TROUBLES DUE TO WATER

Edmonton, Alberta, Sept. 23, 1918.

Latest reports from the Peace River district indicate that the water troubles encountered in several of the wells are under control and that drilling is progressing satisfactorily. The Peace River Oil Company's No. 2 well cut into a big flow of salt water several weeks ago in an attempt to drill through to the supposed lower oil sand in this field. Eventually it was decided to attempt to shut off the water at the bottom of the well and finish the well as a producer in the upper sand. The water is now under control. The location is on the northeast quarter of section 24-85-21-5, on the west side of the Peace. The location is about two miles from No. 1, which was located in the southwest quarter of section 31-85-20-5. The No. 1 well was abandoned in June, 1917, as a result of water troubles. The Peace River Oil Company has located No. 3 well on the southwest quarter of section 4-85-21-5, on the west side of the Peace and about eight miles upstream from Peace River village. The rig from No. 2 will be moved to No. 3 location.

The Tar Island Oil and Gas Company, drilling on the northwest quarter of section 24-85-21-5, on the west side of the river, ran into similar water troubles in the lower formations.

The Three Creeks Oil Company, drilling on section 12-85-21-5, on the east bank of the Peace at the mouth of Three Creeks, has very little in the way of salt water troubles to contend with. Drillers have penetrated what looks like a good oil sand at about 1,000 feet depth. Oil is reported here in commercial quantities.

The Northern Pacific Oil Company is drilling well below 5,000 feet on Brady Island, northeast quarter of section 11-85-21-5, close to the west bank of the river. The Consolidated Oil Fields of Peace River, Ltd. (formerly the Porter Syndicate), are drilling with a Keystone rig on river lot 9 of the Peace River settlement survey, just north of the town and on the east bank of the river. The Albersas Oil Company is reported drilling on the northeast quarter of section 12-85-21-5, on the east side of the river.

The California Oil Company has made a location about a mile and a half north of No. 1 well of the Peace River Oil Company, and is bringing two outfits from the United States.

It is officially announced that the subject of government participating in the development of the oil and gas resources of western Canada has been referred by the Dominion Government to the Cabinet Committee on Reconstruction, which is headed by Hon. A. K. MacLean. This committee will also have under consideration the development of the shale deposits throughout Canada, and particularly those of New Brunswick.

Dr. Dowling is now completing an examination of the natural gas in the Alberta fields, with a view to determining its availability for the production of gasoline. Tests already conducted in the Calgary and Bow Island fields are reported to have shown satisfactory results, and preparations are being made to test the gas in the newly developed Viking field, near Edmonton.

It is reported that natural gas has been struck at 300 feet depth in a well on the W. Garten farm, section 24-45-1-4, 25 miles north of Chauvin.

A company headed by H. H. Cardinal, of Quebec, and A. A. Content, of Morinville, Alberta, is undertaking to develop a mineral water flow discovered in drilling at Morinville.

Eastern Canada.

Chatham, Ont., Sept. 25, 1918.

The British America Oil Company, of Toronto, which now has a large refinery in the Ashbridge Bay district of Toronto, has arranged to locate a branch at or near Windsor, on the Detroit river.

In the Dover field, Kent county, the further deep drilling of the Union Natural Gas Company has so far been unsuccessful in developing anything. No. 8 well has been carried several hundred feet into the Trenton limestone without a show. At No. 10 there is a difficult fishing job, the casing having collapsed 60 feet in the Trenton. Both these wells are north and west of the producers, and were regarded as the best propects in the field. No. 9 well is shut down. The Union Natural Gas Company put the three-inch tubing in No. 7 well, preparatory to installing pumping equipment, but the well cleared up of its own accord and the pump has not been put in. The United Development Company is again drilling on the Terry farm, Dover East.

In Mosa township, Middlesex county, the Glencoe Syndicate of Chatham has a fishing job at 310 feet on the Hugh McLauchlin farm, concession 8. This syndicate has materials on the ground for No. 2 well, Argus A. Campbell farm, concession 8, and will move in the rig when No. 1 on the McLauchlin farm is finished.

The Imperial Oil Company is establishing a distributing plant at Meaford, Ont., in charge of William Chapple.

John Josh, of Petrolia, is disposing of his interests there, and on October 1 will leave, with Mrs. Josh, for South America. Mr. Josh will take complete charge of important development work for a London, Eng., corporation in the southern field.

250 CARLOADS A DAY OF CALIFORNIA GASOLINE SHIPPED EAST TO END SHORTAGE

Taft, Cal., Sept. 21, 1918.

California is face to face with autoless Sundays, due to the recent draft on gasoline stocks. Two hundred and fifty carloads of gasoline are now being shipped by California to the East to make up the existing shortage there. Of this amount, 180 cars are being sent by the Standard, fifty by the Associated and twenty by the Union. This leaves California facing a grave shortage.

Since January 1 the stocks of gasoline on hand at California refineries have been reduced from 1,500,000 barrels to 848,000, to which figure it had dropped by August 1. In gallons this is 33,510,473, while the output for June was 35,312,205. The stock on hand, therefore, is less by some 2,000,000 gallons than a 30-day output. In six months the California stocks were reduced about 55 per cent.

The demand is growing, as shown by the shipments East, while the supply remains stationary. The output has varied but little since the first of the year. California must also face the necessity of providing prospective increases in military demands on the Pacific coast. One immediate way to conserve the supply is to adopt the autoless Sunday, which no doubt will be in effect soon.

Highest Gravity Oil at Ventura.

The new field north of Ventura City has yielded a record breaking well for the State Consolidated. Its production nets 125 barrels of crude oil testing 58 gravity and carrying 85 per cent. of gasoline. The well was recently brought in flowing by heads, but has now settled down to a steady production. The newly completed well is entirely free from water, which proves that the oil sand is fully protected against water infiltration. The valuation of the oil per barrel is put at $6.

While just newly deepened and repaired, the well is an old one, formerly known as the Lloyd No. 2. It was originally drilled to a depth of 2,165 feet. At that level it blew out and long continued to flow great quantities of water with a very small production of oil testing 54 gravity. For several months the company has been repairing the damage, filling the crater, shutting off water and finally deepening the hole to 2,253 feet, from which bottom it is now producing.

The completion of No. 2 to its present depth has made the company's No. 3 located on the hill above the site of No. 2, look very good. No. 3 has been drilled to 2,880 feet, and has had eighty feet of oil sand, not however, of a highly productive character and evidently but a part of the upper sand in which No. 2 was originally finished. Deepening of No. 3 is expected to enable it to reach the lower sand from which No. 2 is now producing.

The oil produced by this new well is the highest grade of any crude that has yet been discovered in the West. The next highest grade is that found on nearby wells of the State Consolidated, General Petroleum and Shell companies. Of this the highest grade tests 50 gravity, while that of other wells tests 54 and 52. Besides its output of crude oil, the great well is producing great quantities of gas, flowing at a rate of 000,000 cubic feet per day.

The Shell Company is also actively engaged in the development of this field, and has its Gosnell well No. 1 down some 3,300-odd feet. This company passed through the extremely light oil sand that supplies the State Consolidated's well and planned to get a well with a greater capacity. From the last stratum of oil sand opened in Gosnell No. 1 the Shell Company is getting eighty-five barrels of 31 gravity crude. The stratum measures forty-seven feet and is one of a number encountered for the distance of more than 300 feet passed through below the 3,000-foot level. The company has made it a practice to test out thoroughly each stratum. The Shell Company has two more wells drilling in this field, both of which are below the 2,200-foot mark.

The General Petroleum is starting its second well in this same field on the Barnhart lease, and will go down in the hope of getting the lower strata uncovered by the State Consolidated and Shell wells. Barnhart No. 1 well continues to produce about seventy barrels daily of 56 gravity oil. Water has never been shut off in this well, however, and it produces large quantities with the oil.

While big wells are being brought in at greater depths near Ventura City, four miles north in what seems to be a shallow extension of the field, where the rich sands come almost to the surface, the New Mexican Oil Company is just starting three new wells, Nos. 7, 8 and 9.

Standard Redrilling at Kern River.

No work other than rerilling is being done on any of the Standard's wells on the Kern River west front, and that is being centered on Nos. 3 and 4 on section 27, where tests will soon be made. Operations in this locality, which have been going on for a number of years without the finishing of a well, have been most difficult, owing to a series of oil sands alternating with water formations. The tests now being made consist of the trying out of each and every sand, which means the shutting off of every individual water source. New development depends upon what the test of the wells already drilled shows.

The trying formation and water trouble have been found by the Associated in its work at Leido, which is an extension of the Standard's field, and its well has been cemented again and again without success. The several failures to get a successful shut-off in the Hale well at McFarland are beginning to lead to fears that perhaps the same water trouble will have to be faced here, although the formation encountered in drilling was more encouraging, and it was thought that the well was located beyond the zone of the Standard and Associated water troubles.

The old Kern River field continues to yield good returns, according to the report of the Kern River Oilfields, Ltd., present owner of section 33. This section, which is the older part of the field, produces per month 53,500 barrels, a daily average of approximately 1,750 barrels. From the properties of the St. Helens, its subsidiary, mostly in Midway, the output was 68,372 barrels, daily average, 2,279. The total production of this company nets about 121,000 barrels per month.

Montebello Production Increased.

The Standard's daily production on the Baldwin Hills property has been increased by 1,500 barrels through the completion of three new wells. Number 11, completed at 2,808 feet, started the ball rolling. The next to be completed, No. 15, was put on the beam at a depth of 3,025. No. 1 was finished up at 2,800. All three wells are doing a little better than 500 each, and give promise of being steady producers. Thirteen wells are in the course of drilling by the Standard Oil Company.

The Petroleum Midway's Darlington No. 1, formerly the San Gabriel, has come in and is producing at a depth of 2,680 feet. The well's initial production was 300 barrels, and settled down to a 225-barrel rate of 16 gravity oil.

The limits of the producing belt to the north seem to be more closely defined by the abandonment of the two wells of the Petroleum Midway, both located north of the boulevard, which passes along the north side of the producing district. A depth of 3,200 feet was attained without getting anything which indicated oil. In the second abandonment, located some distance further north, on the Reisner lease, in consequence of the first failure was stopped at 1,069. However, there are other wells about to be drilled still farther north. The General Petroleum is starting on the location, which indicates that it does not consider all the northern territory yet condemned by the California Star failure.

The Petroleum Midway has also abandoned its Germain well No. 1, which was drilled to 2,762 feet. But for several fishing jobs it would have gone deeper than this.

New Work.

During the past week throughout the California fields but seven new wells were reported, which is just half the number reported the previous week. This brings the total number of new wells started since the first of the year to 535. The Southern Pacific Railroad reported five of this total. Three of its wells were started by the fuel oil department at Coalinga—one on section 31-20-15 and two on section 19-20-15—and two by the Associated at Casmalia, on the Peshino lease. Both of these companies are controlled by the S. P. The Shell Company reported one new well at Coalinga, on section 14-19-15, and the Nevada Petroleum Company started its first well, also in the Coalinga field, on section 30-20-15. Coalinga field had the centre of activity in new work during the past week. Besides five new wells, seven were tested for water shut off and four were deepened or redrilled. In 1917, for the same period of time that has elapsed since January 1 to the present date, there were 750 new wells reported. This year's figure, therefore, shows a decrease of 215 wells.

The record of initial daily productions of wells completed in the various fields of the State during July is a good indicator of the contributions that are being made to the State's production. The average daily initial production of wells completed in the Kern River field in July was 281 barrels; in the McKittrick field, 50 barrels; in the Midway-Sunset field, 70 barrels; in the Lost Hills-Belridge, 85 barrels; in Coalinga, 105 barrels; in Lompoc-Santa Maria, 165 barrels, and in the Whittier-Fullerton field, 1,195 barrels. Considering the productions of wells in the last two areas mentioned, the advantage of developing new fields as a means of speeding prdouction is apparent. Wildcatting, carefully guided by engineering and geological advice, should be encouraged, as it is largely through such more or less hazardous prospecting that our petroleum resources, to which the Montebello field is the most recent addition, are developed.

An idea of the extent of the work done in the California fields in the last three years is indicated by the State Mining Bureau figures. Since the enactment of the law protecting the fields from damage caused by faulty drilling specifications have been issued or tests have been made to the total number of 7,683, comprising 2,242 new well proposals, 2,976 tests of water shut off, 1,851 deepening or redrilling proposals and 584 abandonments.

The oil field operations during the three years involved an expenditure of not less than $50,000,000. The cost of the engineering work and supervision conducted by the State Mining Bureau amounted to $184,560, less than four-tenths of 1 per cent. of the total expenditure, or $81 per new well. In most cases no other expenditure for engineering work was made by the well owners themselves.

Within a week's time it will be discovered whether or not the new work on the Kramer well, of the Standard, nine miles east of Fullerton and five miles southeast of Olinda, will result in a new field. The drilling was stopped at 2,763 feet, the casing perforated, and the tubing has just been put in. The formation for the last 100 feet drilled has been a mixture of oil sand and good shale. The well is lively with gas, and the showing of oil in the hole for the past couple of weeks has led observers to believe that a good producer is in sight. Success in the Kramer property by the Standard will mean the opening of several thousand acres of the eastern end of the field.

With the idea of discovering a productive field within the city limits of Los Angeles, J. M. Kellerman will start a new well about a mile south of Los Feliz Boulevard, near the edge of the Hollywood section of the city. The location is four or five miles from the nearest production, and is on what is sometimes called the Griffith park anticline. Years ago a number of posthole wells were sunk, but Mr. Kellerman is the first to attempt to sink a deep well.

The Mining Bureau report also shows 19 wells tested for water shut off, eight wells to be deepened or redrilled and no abandonments for the past week. The tabulated account follows:—

Field.	Begin drilling new wells.	Test of water shutoff.	Deepen or redrill wells.	Aban-don.
Valley—				
Midway-Sunset	..	..	..	..
Coalinga	5	7	4	..
Kern River	..	1	2	..
McKittrick	..	..	..	..
Lost Hills-Belridge	..	1	..	..
Coast—				
San. Maria-Lompoc	2	4	..	..
Summerland	..	..	..	..
South—				
Fullerton-Whittier	..	2	..	..
Ventura Co-Newhall	..	4	2	..
Los Angeles-S. Lake	..	..	..	..
Totals	7	19	8	..
Previous week	14	23	4	3
Difference	7	4	4	3

Miscellaneous Notes.

To the credit of the Ventura Refining Company belongs the first paraffine wax factory on the Pacific Coast. The plant is located at the Montebello lease in Ventura county and the output is from 100 to 200 tons per month, which sells for about 10 cents per pound. The plant, which has recently undergone reconstruction, represents an outlay of approximately a half million dollars.

The Standard has suspended all drilling in the Santa Maria region. The last to stop were the wells on the Shaw ranch, where a depth of close to 4,000 feet was attained. The wells are small and give only a heavy oil.

The Empire Gas and Fuel Company will have to start drilling shortly or forfeit its lease from the Jade on the north half of the northeast quarter of section 15-32-23, on which it has done no work for a long time. According to reliable information the Jade has so notified the Empire, and it is understood that if the lease should be forfeited the International is anxious to add it to the rest of the Jade land which it has under lease. The Empire is a large operator in the mid-continent and since its limited operations in California failed to develop any glowing success it has centered all its efforts in Oklahoma.

After fishing for three weeks for a string of tools lost at a depth of 4,127 feet, the Brea Canyon Oil Company decided to leave the tools in the hole and bring the well in. The results were beyond the wildest expectations. The well started off under a pressure of 750 pounds and 1,000 barrels a day. The production is coming from shale. Very little oil sand was drilled through. This No. 29 well is the biggest well in Brea Canyon district.

Work is to be started at once upon a well for the Echo-Brea Oil Company on the Aguila mineral property of T. A. Slocum in Santa Paula Canyon. The location is on the northern quarter of section 9-4-21 and about three-quarters of a mile from the nearest present production on the Capital crude, northeast quarter section 8. The territory is estimated to be oil bearing at 1,200 feet. The Capital crude oil tests above 35 gravity.

Well Workers.

The California Oil and Gas Well Workers started their drive for more wages and appealed to the Federal Oil Conciliation Board at Los Angeles for an increase in wages of $1 a day per man. The committee making the

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appeal was headed by W. J. Yarrow, their chairman. In the event the Oil Inspection Board rejects the demands the oil workers will take their case before the War Industries Board. The proposed wage increase is to be effective at the time the shipyard workers receive their next raise.

They state that there is no thought of strike; that the wage increase was made necessary by the increased cost of living since January 1, 1918, when a minimum wage scale of $4 for eight hours went into effect in California. The new wage scale will make the wage of the oil driller $6; tool dresser, $7; pumpers, $5.50, and engineers on pipelines in refineries, $6.25.

General Petroleum Report

The report of the General Petroleum Corporation has had its effect upon the stock exchanges in both Los Angeles and San Francisco, and during the past week this corporation's business on the exchange was by far the most active. The growth in business, earnings and dividends of the G. P. during the last two years has been remarkable. At the time the General Petroleum Company was reorganized as the General Petroleum Corporation the shares brought $75. At present they are quoted at $107. Dividends have advanced to 12 per cent. per annum and net earnings for the last fiscal year were $27.15 per share.

Commencing October 1 the General Petroleum will pay the first of each month $1 a month dividends to stockholders of record on the 15th of the previous month. They will also pay a last quarterly dividend of $2.50 per share in October, bringing the total disbursements during that month to $552,462.

The gross profit of the fiscal year just closed was $8,183,106, as compared with $4,884,889 of the last previous period. The gross income was $7,330,989, as compared with $4,372,185 last previous fiscal year. Deductions made the fiscal year just closed for interest on funded debt., depreciation, oil land exhaustion and other things aggregated $2,470,978, as compared with $1,028,517 the year previous, making the net income for fiscal year 1918 (after deducting provisions made for Federal taxes), $3,762,491. For the previous fiscal year, 1918, the profit and loss surplus was $2,479,345, as compared with $369,003 at the beginning of 1917. Dividends on preferred stock were the same both fiscal years, viz., $224,851. On common stock, $1,349,017 was paid during the fiscal year 1918, as compared with nothing the same period 1917.

The company handled during the fiscal year 20, 857,650 barrels of oil, an increase of 2,922,907 barrels over the previous year. Sales amounted to 13,279,961 barrels of refined and fuel oil, an increase of 3,220,752 barrels for the year.

KEROSENE SHORTAGE

Leads to Appeal from Requa to All Refineries for Maximum Production.

Washington, Sept. 28, 1918.

There is a growing shortage of kerosene, which the United States Fuel Administration views with alarm for war plans as well as for the increasing consumption of this country during the season of maximum consumption.

Appeal to all the refineries of the country, through the National Petroleum War Service Committee, was made this week for maximum production to meet the impending shortage. Mark L. Requa, the general director of the Oil Division, sent the following letter to A. C. Bedford, chairman of the National Petroleum War Service Committee:—

Dear Mr. Bedford:—

I am convinced it is absolutely necessary that the kerosene production of the country should be materially increased. Statistically, kerosene is in a more unsatisfactory position than gasoline or fuel oil. We have not heretofore felt the acuteness of this situation because of the summer season through which we have just passed. Now, however, we are approaching the season of maximum kerosene consumption, and unless steps are taken immediately to provide increased supply we shall undoubtedly this winter face a shortage much more acute than we have as yet experienced in any of the petroleum products.

The statistics now in the hands of your subcommittee show clearly the decrease in the percentage output of kerosene by practically all refineries. The situation as a whole shows decrease in barrels produced and a very large increase in domestic consumption, which fortunately has been offset by a decrease in exports due to lack of tonnage for overseas movement. This export movement is now increasing, and the winter will soon be upon us. I request, therefore, that you communicate with each refinery, forwarding them a copy of this letter, and urge upon them the absolute necessity of increasing their kerosene production to the fullest extent possible, at least to a percentage amount equal to that of last year.

Will you please act upon this promptly, and forward me a detailed report as to the replies received?

Yours very truly,
(Signed) M. L. Requa.
General Director, Oil Division, United States Fuel Administration.

German Interests Quarrelling Over Rumanian Oil Fields.

London, Sept. 3, 1918.

According to a report from Zurich rival parties in Germany are at loggerheads over the division of the spoils of the Rumanian oil fields. The contending interests are the Deutsche Bank and the Disconto-Geselshaft. The former has the Prussian authorities behind them, with a political backing. The South German party, with the Clerics, are supporting the Disconto people.

The Deutsche Bank faction is anxious to construct a pipeline from the Rumanian oil fields to Upper Silesia. The Disconto interests, on the other hand, have been negotiating to provide the Bavarian Danube district with supplies of oil.

There is keen competition between the two parties and Rumanian exporters are, meantime, profiting from the quarrel.

How it may end remains to be seen, but it should be borne in mind that the German Government are intent upon converting petroleum, and especially petrol, into a state monopoly.

British Oil Concession in Costa Rica.

London, Sept. 4, 1918.

Information has just reached London that a British group has secured entire control of a concession to exploit oil in the northern half of the republic of Costa Rica. Experts believe that rich oil-bearing lands of California and Mexico pass through Costa Rica in South America, where they have already been proved in Colombia and Venezuela. American oil interests have already obtained a concession over the southern part of the republic.

DOHERTY AROUSED.

Chairman of Taxation Committee, War Service Committee, Says Revenue Bill Must Be Amended.

Henry L. Doherty, chairman of the Taxation Committee of the National Petroleum War Service Committee, in a public statement takes exception to the petroleum section of the war revenue bill, characterizing the 10 per cent. exemption of the value of oil as inadequate. He prophesies that unless further relief is granted the production of oil will continue to fall. Mr. Doherty said:—

"The oil business is already in a critical condition. We are drawing on a small reserve stock at an alarming rate. Our future supply depends upon the prospector, known to the oil business as a wildbatter. The prospector cannot live under the present bill.

"To subject the profits from prospecting for oil to 80 per cent. tax and then to amend it only to the extent of exempting 10 per cent. of the ground value of the oil is not sufficient encouragement to prospectors.

"The big oil companies owning pipelines and refineries, while engaged in a hazardous business, are making no request of the government to be treated any differently than the safer lines of business. They are, however, anxious about their future supply of oil to fill their pipelines and to supply their refineries. While the transportation and refinery companies will suffer acutely from an oil famine, the real sufferers will be the users of petroleum products.

"In framing a revenue bill the national needs are paramount, and no industry can safely urge consideration simply for its own preservation. But the public can determine whether the government can be best served by a drastic tax which drys up the source of supply and eventually lessens the revenue, or by a moderate tax which can be maintained.

"The production end of the oil business is different from the ordinary business. The oil producer is really selling off his property. When his wells are exhausted his property is gone. His assets are also gone. He has, in reality, paid a property tax instead of a profit tax. Other industries have plants left which are still capable of earning profits. If required to pay such a tax as suggested, even under the amended bill, the oil producer is out of business without enough left of the value of his property to continue in business.

"The men in the oil business can be depended upon to do everything in their power to supply our needs for petroleum products for domestic and war purposes. We are not asking that the oil producer be favored, but that the distinction between the oil production and other lines of business be recognized."

National Petroleum Association Officers and Trustees for 1918-1919.

At the recent meeting of the National Petroleum Association at Atlantic City the following trustees were elected:—Samuel Messer, treasurer of the Emlenton Refining Company; W. E. Wall, president of the Fred G. Clark Co.; A. C. Woodman, president of the Union Petroleum Company. These trustees elected the following officers:—President, Samuel Messer, Emlenton, Pa.; treasurer, W. A. McCafferty, Bradford, Pa.; recording secretary, Herbert G. Eaton, Warren, Pa.; general counsel, C. D. Chamberlin; traffic manager, F. W. Bolt; Washington counsel, Fayette B. Dow.

MINERAL OIL EXPORTS FOR AUGUST AND EIGHT MONTHS SHOW HEAVY INCREASE

The following statement of exports of mineral oils, from the United States, has been completed by the Bureau of Foreign and Domestic Commerce:—

Exports by groups.	August 1918.	August 1917.	8 months ended August 1918.	8 months ended August 1917.
Mineral oils—				
Gallons	237,979,571	225,487,195	1,828,722,361	1,695,532,542
Dollars	32,919,914	21,307,362	227,470,496	154,931,531
Crude mineral oil—				
Gallons	9,553,294	12,192,207	132,549,891	108,504,211
Dollars	560,642	408,280	7,468,943	4,843,940
Illuminating oil—				
Gallons	37,109,644	45,936,349	321,963,575	457,252,614
Dollars	4,320,703	3,817,066	32,460,673	32,514,937
Lubricating oil—				
Gallons	27,807,975	23,247,049	175,757,051	179,556,884
Dollars	8,777,919	4,858,128	49,632,214	34,264,732
Gasoline, naphtha, etc.—				
Gallons	56,944,192	30,593,418	378,621,070	272,594,982
Dollars	13,677,715	7,275,004	93,525,191	58,733,714
Residuum, fuel oil, etc.—				
Gallons	106,564,466	113,518,172	819,830,774	677,623,851
Dollars	4,948,284	44,395,445	24,574,208	5,582,936

MEDICINAL ALL GRADES TECHNICAL

PETROLATUM

BEAVER PETROLATUM

BEAVER REFINING CO.

OFFICE Union Arcade, Pittsburg, Pa.

REFINERY Washington, Pa.

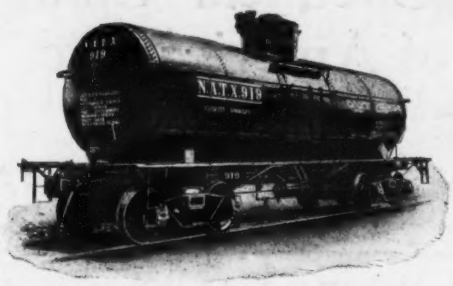
North American Car Company

General Offices - 327 South La Salle Street, Chicago

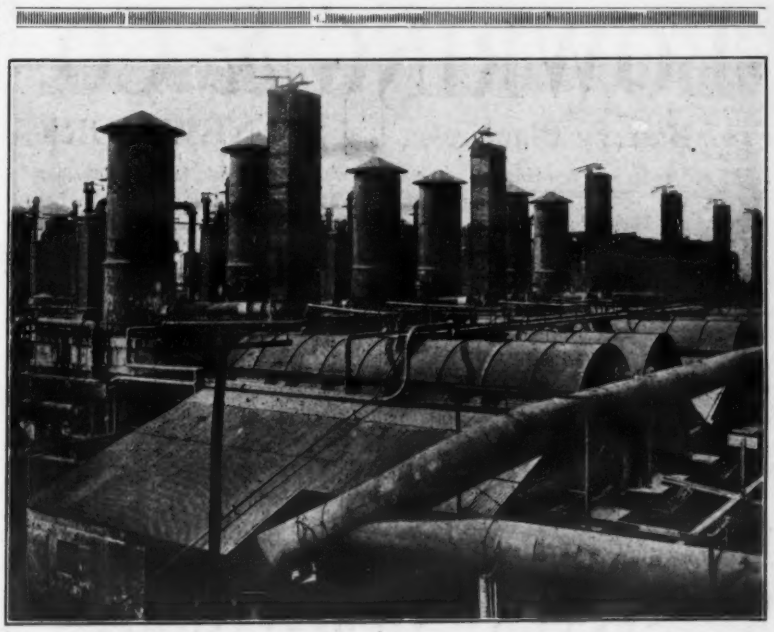
TANK CARS

First Class Equipment

Leased to Shippers of Liquid Products



CAR SHOPS — CHICAGO, ILLINOIS — COFFEYVILLE, KANSAS



First steps in oil refining

THE illustration shows part of the fire still equipment at the Refinery of the Tide Water Oil Company at Bayonne, N. J. This is the first step in refining crude oil into its various products.

Later stages of the refining process are taken care of in the same large way, no expense being spared for adequate and modern equipment.

And every step of the way the utmost care and attention are given to the processes, to insure uniform and good results, as is proved by the quality of Tide Water products.

TIDE WATER OIL COMPANY

11 BROADWAY NEW YORK

We Offer to the Trade:

Benzidine Base
Benzidine Sulphate
Metatoluylenediamine
Paramidophenol Base
Paramidophenol HCL
Diethylaniline
Metaphenelenediamine

The Chemical Company of America, Inc.

Manufacturing Chemists

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Works: Springfield, New Jersey

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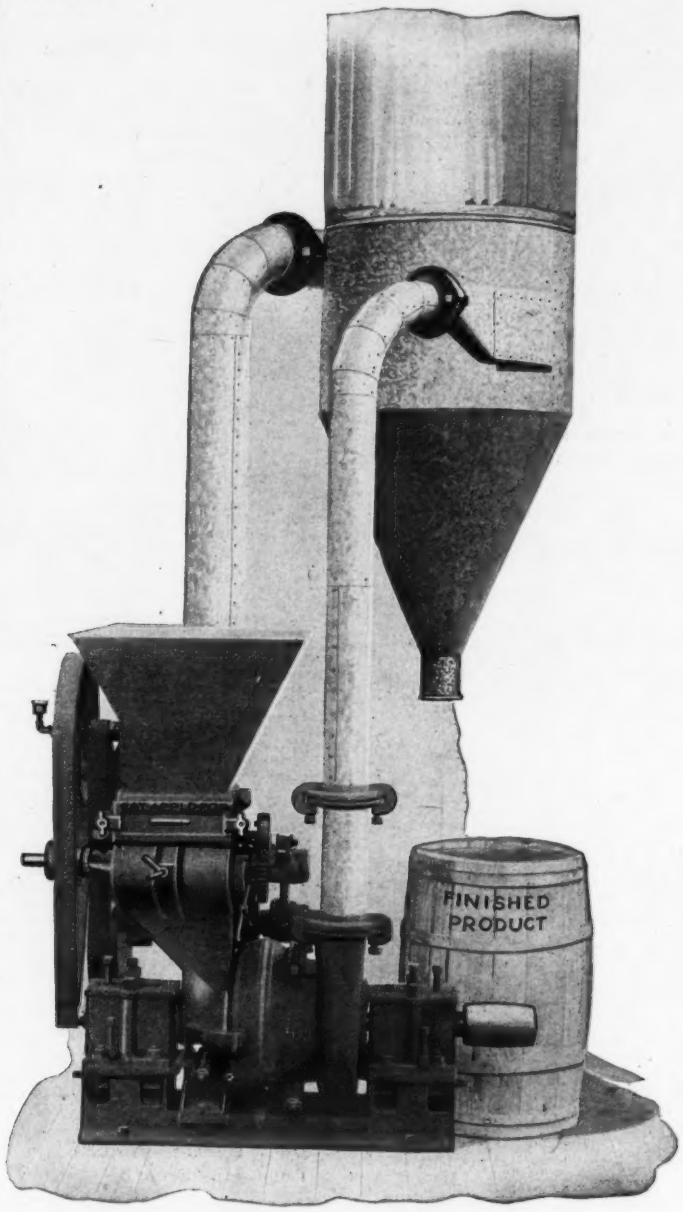
CASTOR BEANS

Our facilities enable us to render prompt and efficient service at minimum charges

THERE ARE NOW 132 OF THESE MILLS IN ACTUAL OPERATION

Watch how the number grows and you will begin to realize why it is the best mill for small grinding requirements when handling all kinds of soft, dry materials which are used in Chemical, Dye, Paint and Rubber Manufacture.

You no doubt have these same small grinding requirements and it will pay you to ask us what results you can obtain on a No. 0000 Mill.



Specifications of the No. 0000 Pulverizer:

Small Size—Small Cost—Big Production. Requires 5 H. P.

Produces 200 to 1,000 pounds per hour, capacity depending upon material and fineness.

Grinds coarse as 50 mesh and fine as 200 mesh or finer.

Air-Separation—No Screens.

Space required 4 ft. x 4½ ft.

Send for special circular giving full description.

RAYMOND BROS. IMPACT PULVERIZER CO.
1303 No. Branch Street Chicago, Ill.

TOTAL OUTPUT OF REFINERIES IN THE UNITED STATES FOR 1917.

(BY MONTHS.)

1917.	Run to stills—Crude, barrels.	Run to stills—Other oils, barrels.	Gasoline, gallons.	Kerosene, gallons.	Gas & fuel, gallons.	Lubricating, gallons.	Wax, pounds.	Coke, tons.	Asphaltum, tons.	Miscellaneous, gallons.	Losses, barrels.
January	24,839,772	*	203,618,724	137,248,370	469,596,208	60,941,062	39,558,627	44,427	49,894	27,331,019	941,924
February	23,083,433	*	184,602,595	129,074,504	446,964,925	54,631,765	36,370,297	42,047	46,619	23,685,686	941,110
March	26,230,138	*	220,523,571	159,028,978	494,855,838	64,345,221	40,868,930	48,830	52,823	26,977,334	870,380
April	25,994,938	*	228,945,164	157,826,942	462,846,339	63,218,215	41,037,511	46,099	52,849	30,959,901	957,533
May	27,253,391	*	238,816,209	147,894,846	504,859,695	65,926,007	38,686,364	43,575	67,612	31,086,377	979,245
June	26,453,210	*	233,671,746	151,477,333	496,742,434	61,045,757	38,269,670	42,513	67,931	30,205,172	1,011,568
July	26,776,856	2,435,533	244,145,292	161,679,063	599,454,966	64,333,903	38,075,280	42,641	65,272	92,359,401	1,111,511
August	27,900,623	2,376,580	254,464,491	149,528,513	632,151,971	64,107,817	40,158,063	46,240	73,878	92,706,312	1,286,141
September	27,529,022	2,632,988	256,132,050	143,205,644	629,914,572	60,757,049	38,999,341	42,986	62,520	80,386,471	1,182,560
October	27,698,023	2,865,518	271,891,234	140,559,542	621,492,374	68,516,071	48,300,033	48,849	78,886	91,804,160	1,355,219
November	26,215,979	2,519,709	264,888,709	125,893,202	592,490,037	64,861,375	41,181,400	45,815	73,289	87,115,002	1,203,110
December	25,155,996	2,069,351	248,846,638	123,354,046	561,954,921	61,000,596	39,694,595	45,175	58,852	87,548,408	1,233,528
Totals	315,131,681	14,897,670	2,850,546,423	1,726,768,976	6,513,324,280	753,776,840	481,200,081	539,366	739,425	702,167,243	13,073,829

* No account first six months 1917.

TOTAL OUTPUT OF REFINERIES IN THE UNITED STATES FOR FIRST SEVEN MONTHS OF 1918.

1918.	Run to stills—Crude, barrels.	Run to stills—Other oils, barrels.	Gasoline, gallons.	Kerosene, gallons.	Gas & fuel, gallons.	Lubricating, gallons.	Wax, pounds.	Coke, tons.	Asphaltum, tons.	Miscellaneous, gallons.	Losses, barrels.
January	23,842,587	2,500,334	242,632,044	119,358,184	547,866,248	56,625,425	39,238,858	41,216	54,554	70,995,829	1,078,181
February	23,586,676	2,298,333	234,324,619	121,218,320	510,165,397	58,300,914	35,087,337	42,871	42,033	75,134,088	983,992
March	26,229,662	3,696,872	269,627,968	151,228,007	587,985,804	69,808,351	43,597,019	44,248	56 901	94,865,148	1,097,489
April	26,201,544	3,956,244	293,396,162	153,703,682	578,255,341	71,022,204	40,173,524	45,674	51,242	89,242,012	1,182,020
May	28,510,698	4,112,023	319,391,202	160,590,760	631,586,209	79,589,735	42,544,633	48,864	60,449	88,627,491	1,269,281
June	28,140,479	3,483,270	315,023,445	151,840,252	628,842,033	74,420,996	41,317,794	46,605	50,321	81,110,922	1,282,177
July	29,170,718	5,951,537	332,022,095	156,828,826	658,439,682	79,303,107	41,691,551	48,914	58,433	159,374,139	1,338,304
Totals	185,492,364	25,798,613	2,006,417,535	1,014,768,031	4,143,140,714	488,568,732	283,650,716	317,892	374,233	659,349,629	8,231,444

TOTAL STOCKS ON HAND AT REFINERIES AT END OF EACH MONTH TILL AUGUST, 1918.

1918.	Run to stills—Crude, barrels.	Run to stills—Other oils, barrels.	Gasoline, gallons.	Kerosene, gallons.	Gas & fuel, gallons.	Lubricating, gallons.	Wax, pounds.	Coke, tons.	Asphaltum, tons.	Miscellaneous, gallons.	
January	12,324,191	752,740	469,277,166	436,254,045	547,450,775	141,907,918	153,807,210	8,010	92,209	230,886,638	.....
February	11,633,411	714,444	518,794,609	411,150,157	502,046,087	150,259,653	148,732,948	9,855	98,695	229,923,515	.....
March	13,122,241	922,360	526,382,386	356,580,540	483,147,727	146,572,398	162,221,741	11,301	107,122	238,659,787	.....
April	12,600,062	954,205	509,197,134	393,527,476	471,644,479	144,383,212	151,228,317	13,109	101,328	248,260,551	.....
May	11,824,633	872,300	460,637,479	343,311,945	515,020,224	161,000,729	168,178,328	15,583	104,214	317,115,697	.....
June	11,956,151	932,561	418,440,353	426,285,676	550,704,759	158,316,257	169,424,428	17,478	97,631	273,877,024	.....
July	14,026,525	1,548,971	349,928,604	432,807,129	519,012,839	136,460,207	176,539,564	17,943	92,597	450,086,589	.....

GASOLINE OUTPUT IN 1917 SHOWED GAIN OF 111 PER CENT. OVER OUTPUT FOR 1916

Washington, Sept. 27, 1918.

Statistics just compiled under the supervision of J. D. Northrop, United States Geological Survey show that the natural gas gasoline industry in the United States made marked progress in 1917.

The quantity of raw gasoline recovered from natural gas in 1917, including that produced by compression, by absorption, and by vacuum pumps, as well as that saved as drips from gas mains, was 217,884,104 gallons, a gain of 114,391,415 gallons, or 111 per cent., over the output in 1916. Of this quantity 168 921,555 gallons, or 77.5 per cent., was recovered by compression and by vacuum pumps and the remaining 49,017,549 gallons, or 22.5 per cent., by absorption and by salvage from gas mains. The combined product of gasoline obtained by compression and by vacuum pumps was greater than in 1916 by 83,998,768 gallons, or 99 per cent., and the product obtained by absorption and from drips was greater by 20,447,647 gallons, or 110 per cent.

Commercial Gasoline.

The quantity of commercial gasoline represented by the output of raw gasoline in 1917, though not susceptible of accurate determination, probably amounted to more than 300,000,000 gallons.

The average price received in 1917 for the raw production at the sources of production was 18.45 cents a gallon, and the market value of the entire output was $40 188,956, a gain of 4.6 cents in average unit selling price and of $25,857,808, or 180 per cent., in gross market value as compared with 1916.

The volume of natural gas from which the output of natural gas gasoline in 1917 was recovered is estimated to have amounted to about 429,000,000,000 cubic feet, and the average recovery of gasoline per thousand cubic feet by all methods was about one-half gallon.

The number of plants, including vacuum pump plants, recovering gasoline from natural gas increased from 596 at the beginning of 1917 to 886 at the end of that year, a gain of 49 per cent., and the combined daily capacity of all plants increased during the same period from 495,448 gallons to 902,385 gallons, or about 82 per cent.

Natural Gas Gasoline.

The following tables include the essential statistics of the natural-gas gasoline industry in the United States in 1917:—

Classification of Production of Natural Gas-Gasoline in 1917 by Principal Methods of Manufacture.

Gasoline Produced by Compression and by Vacuum Pumps.

State.	Plants—No.	Plants—Daily capacity, gallons.	Gasoline produced—Quantity, gallons.	Gasoline produced—Value, dollars.	Gasoline produced—Price per gallon, cents.	Gas used—Estimated volume, M cu. ft.	Gas used—Average yield of gasoline per M cu. ft. gallons.
Oklahoma	207	456.632	108,728,213	20,321,067	18.68	36,399,280	2.987
California	40	82,002	23,478,521	3,637,827	15.49	27,477,443	0.854
West Virginia	159	44,348	12,276,784	2,211,404	18.01	4,845,648	2.534
Pennsylvania	234	32,564	9,011,199	1,792,430	19.89	3,572,356	2.522
Louisiana	18	17,915	4,439,929	719,758	16.14	1,468,346	3.037
Illinois	54	15,392	4,268,158	756,344	17.72	2,020,044	2.113
Texas	9	11,050	3,997,337	674,443	16.87	2,685,316	1.489
Ohio	54	8,337	2,331,498	423,106	18.15	836,639	2.788
New York, Kansas, Kentucky, Colorado	5, 1, 3, 1	3,322	369,925	70,361	19.02	150,784	2.453
Totals	785	671,652	168,921,555	30,606,830	18.12	79,455,856	2.126

*Gasoline Produced by Absorption.**

State.	Plants—No.	Plants—Daily capacity, gallons.	Gasoline produced—Quantity, gallons.	Gasoline produced—Value, dollars.	Gasoline produced—Price per gallon, cents.	Gas used—Estimated volume, M cu. ft.	Gas used—Average yield of gasoline per M cu. ft. gallons.
West Virginia	29	91,315	20,891,863	4,300,319	21.09	162,925,703	0.125
Oklahoma	27	35,804	6,385,211	1,220,838	19.09	48,320,661	0.132
California	9	17,669	5,339,063	800,195	14.99	17,873,804	0.299
Pennsylvania	17	26,600	4,815,051	985,668	20.47	45,914,700	0.105
*Kentucky	2	†13,000	3,725,893	745,210	20.00	24,871,590	0.150
Ohio	7	16,800	3,108,062	628,270	20.21	29,225,502	0.106
‡Texas	3	21,650	2,978,068	484,898	16.28	10,010,233	0.298
Kansas	5	3,842	1,071,633	220,550	20.58	9,274,289	0.116
*Illinois	1	2,000	665,851	109,689	16.47	665,851	1.000
*Louisiana	2	2,203	519,834	94,989	18.27	675,165	0.770
§New York	..	....	7,000	1,400	20.00	2,776	....
Colorado	..	....	....	.....	....	.....	....
Totals	102	230,883	49,017,549	9,592,026	19.57	349,760,274	0.140
Grand totals	886	902,385	217,884,104	40,188,956	18.45	429,197,797	0.508

*Includes drip gasoline.
†Includes gasoline produced in Kentucky from West Virginia gas.
‡Includes some gasoline produced by compression.
§Drips only.

Gasoline From Natural Gas Marketed in the United States in 1917.

State.	No. of operators.	Plants—No.	Plants—Daily capacity, gallons.	Gasoline produced—Quantity, gallons.	Gasoline produced—Value, dollars.	Gasoline produced—Price per gallon, cents.	Estimated volume of gas treated M cu. ft.	Average yield of gasoline per M cu. ft. gas, gallons.
Oklahoma	167	234	492,436	115,123,424	21,541,905	18.71	84,719,941	1.359
West Virginia	128	188	135,663	32,668,647	6,511,813	19.93	167,771,351	0.195
California	45	49	99,761	28,817,604	4,438,022	15.40	45,351,247	0.635
Pennsylvania	287	251	59,164	13,826,250	2 778,008	20.01	49,487,056	0 279
Texas	10	11	32,550	6,920,405	1,149,441	16.61	12,677,216	0.546
Ohio	49	61	25,137	5,489,590	1,051,376	19.38	30,062,141	0.181
Louisiana	15	20	20,118	4,979,754	814,747	16.36	2,143,511	2.323
Illinois	33	55	17,302	4,934,009	866,033	17.55	2,685,895	1.837
Kentucky	5	9	13,400	3,818 209	765,186	19.99	24,915,946	0.153
Kansas	4	6	4,642	1,174,980	241,319	20.53	9,315,339	0.126
New York, Colorado	7	6	2,129	181,262	33,116	18.27	68,154	2.650
Totals	750	896	902,385	217,684,104	40,188,956	18.45	429,197,797	0.508

Petroleum Iron Works Company Will Exhibit at I. O. M. A. Convention.

The Petroleum Iron Works Company, of Ohio, and its subsidiaries, the Pennsylvania Tank Car Company and the Pennsylvania Tank Line, will exhibit at the Independent Oil Men's Association, which is to be held the week of October 7 in New York city. The Petroleum Iron Works Company's products are steel plate construction for the petroleum industry, including tanks, agitators, condensers, etc., G-E-M bilged steel barrels, Presteel I. C. C. drums and one-time containers. The products of the Pennsylvania Tank Car Company and Tank Line are, of course, tank cars, built and leased.

Refinery Work at Houston Is Progressing Rapidly.

Houston, Texas, Sept. 28, 1918.

The Humble Oil and Refining Company has its plans well advanced for the construction of a 2,000-barrel refinery on the ship channel near here. The proposed plant will be connected with the company's oil pipeline system.

The Odessa Oil and Refining Company has finished its new refinery on the Texas and Pacific Railroad, two miles east of Ranger, and the plant was placed in operation a few days ago. It has a daily capacity of 3,600 barrels.

The Empire Gas and Fuel Company, of Houston, will begin the construction of a new refinery on the ship channel, south of Houston, as soon as the necesary material and equipment can be purchased and assembled, it is announced.

The Hercules Refining Company has placed its new refinery in West Dallas in operation. The plant has a daily capacity of 1,200 barrels. Other units will be added as the demand may require, it is stated. T. W. Sowell, of Dallas, is president of the company.

Standard of California Grants 10 Per Cent. Wage Increase.

The Standard Oil Company of California announces that, effective October 1, 1918, the wages of all employes in all departments of the company, other than those whose wages were adjusted in September, 1918, and those aboard floating equipment, will be increased 10 per cent., except that no increase shall bring the wage above $4,000 per year; except, further, that those who come within the scope of the Shipbuilding Labor Adjustment Board (so-called Macey Award Committee) will receive an adjustment in accordance with the finding of that committee, which will be effective as of August 1, 1918, and which ruling we anticipate will be announced prior to October 1, 1918.

The Prime Petroleum Company, of which Glenn R. Smith, of Tulsa is the general manager, is to build a gasoline absorption plant with a daily capacity of 4,000 gallons at a cost of $135,000.

FOREIGN TRADE OPPORTUNITIES.

Correspondence in regard to any of the following foreign trade opportunities should be addressed to the Bureau of Foreign and Domestic Commerce, Washington, D. C., or to any district or co-operative office of the bureau, and not to this office. When writing give the number of the item.

No. 27,480—Oils and Chemicals.

A business man in Switzerland wishes to secure an agency for the sale of mineral and edible oils and chemicals. Payment will be by cash against documents or agency terms. Correspondence should be in French. References.

No. 27,481—Sulphate of Copper and Sulphate of Potash.

An agency is desired by a man in France for the sale of 5,000 tons of sulphate of copper and sulphate of potash. Payment will be made by cash against documents. Goods should be put up in sacks of 100 kilos, gross weight. Correspondence may be in English. Reference

No. 27,482—Chemicals, Drugs, Etc.

A firm in Argentina desires to secure an agency, on a commission basis, for the sale of chemicals, drugs, dry colors and varnishes. A member of this firm is at present in the United States, with whom interested parties may communicate. Quotations should be made f. o. b. New York. Correspondence may be in English. References.

No. 27,487—Industrial Machinery.

A firm in Brazil desires to secure agencies for the sale of machinery and accessories of all kinds for the manufacture of rubber goods, resin, turpentine, chemical products, sugar, alcoholic beverages, thread, textiles, matches, explosives, etc.; materials for designing construction work, for the manufacture of glass, supplies for naval and military forces, etc.; oils; paints. Correspondence may be in English. References.

No. 27,488—Fruit Extracts, Etc.

A man in Cuba desires to represent American manufacturers of fruit extracts, syrups and flavors. Full information in regard to conditions of sale, agency, etc., should be submitted.

No. 27,496—Chemicals and Dyes.

The managing partner of a firm in Argentina, who is at present in the United States, desires to secure an agency, on a commission basis, for the sale of chemicals and dyes. He wishes to do business with manufacturers only. Payment will be made by cash against documents at destination. Correspondence may be in English. References.

No. 27,506—Paints, Colors, Dyes, Etc.

A firm in India wishes to exclusively represent American manufacturers and exporters of glassware, toilet articles, paints, colors and dyes, oils, cement, soda and acids. Payment will be made by 60-day sight draft against documents. Correspondence may be in English. References.

No. 27,510—Starch-making Machinery.

The representative of a firm in South Africa, who is at present in the United States, desires to purchase complete starch making machinery and equipment with a capacity of from five to ten tons per day; and glucose by-prdoucts machinery. He is also interested in machinery for extracting oil from oil seeds. Reference.

Cadmium and Other Metals on Conservation List.

Washington, Sept. 28, 1918.

Additions to the export conservation list announced by the War Trade Board, effective September 24, are:—Cadmium alloys, cadmium compounds, cadmium metal, ferrozirconium, zirconium alloys, zirconium compounds, zirconium metal, zirconium ores or concentrates.

Trade DOW Mark

WE MAKE
And Can Ship Promptly

Diethylaniline
Ethylene Bromide
Ethyl Bromide
Monobrombenzol
Acetyl Salicylic Acid
Chloroform, U.S.P.

THE DOW CHEMICAL COMPANY
Midland, Michigan

DU PONT AMERICAN INDUSTRIES

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Dinitrophenol
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Count your chickens before they are hatched.
Do not be hampered by drying methods which are uncertain and force you to re use promises of delivery—GIVE YOUR CUSTOMER SERVICE—Tell him you will deliver in a specified time by installing one of the

"Proctor" DRYERS *for*

Paint Colors
Chemicals
Dry Colors for Printers' Inks
Aniline Dyes
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Remember—"Proctor" Dryers are absolutely guaranteed.

The Philadelphia Textile Machinery Co., Builders of Drying Machinery
PROVIDENCE, R. I. Howard Building — PHILADELPHIA — CHICAGO ILL. Hearst Building
HAMILTON, Ont., Can.—W. J. Westaway, 5 Sun Life Building

N. P., O. & V. A. TO DISCUSS PROBLEMS

Noted Speakers to Address Convention at Boston Oct. 22-24.

The opening exercises of the thirty-first annual convention of the National Paint, Oil and Varnish Association, to be held at the Copley-Plaza Hotel, Boston, Tuesday, October 22, at 9.30 a. m., should prove of unusual interest.

Massachusetts' War Governor McCall has accepted an invitation to be present and extend a welcome on behalf of the Commonwealth of Massachusetts. Governor McCall has been very much in the public eye recently on account of his entering as a candidate for nomination for Senator against Senator Weeks, the present junior Senator from Massachusetts. After entering the race, Governor McCall, two weeks later, withdrew from the contest, his letter of resignation creating widespread interest.

Mayor Andrew J. Peters, recently elected mayor of the city of Boston, will extend a greeting from the city.

Other speakers at the opening session will be President Henry L. Harriman, of the Boston Chamber of Commerce, and the to-be-elected president of the Paint and Oil Club of New England.

A response to these addresses of welcome will be made by Charles E. Field, of Chicago, on behalf of the delegates of the national association.

The Boston committee having in charge the arrangements for the convention, are very much pleased at the large number of registrations already received. Indications point to a very large and enthusiastic convention.

Among the interesting subjects that will come up for consideration of the delegates will be:—The report of the War Service Committee, of which President E. J. Cornish, of the National Lead Company, is chairman; report of the Export and Foreign Trade Development Committee, of which John M. Peters, of New York, is chairman; report of the Trade-Mark Bureau, of which D. W. Edgerly, of New York, is chairman; report of the Committee on Credits and Collections, of which Robert P. Simons, of Pittsburgh, is chairman; report of the Cost Accounting Committee, of which E. W. Storey, of Gibbsboro, N. J., is chairman.

In the opinion of President Morton there never was a time in the history of the association when there was greater need of a conference of leaders in the paint and varnish industry. There are so many unusual problems confronting business men that they should meet together to encourage each other by mutual exchange of ideas.

Pittsburgh Paint, Oil & Varnish Club Elects Delegates to N. P., O. & V. A. Convention.

Pittsburgh, Sept. 28, 1918.

The Pittsburgh Paint, Oil and Varnish Club held its September meeting at the Union Club, with thirty persons present, including Mr. Ginn, Cincinnati representative of the Archer-Daniels Linseed Company.

Mr. Caspar, upon invitation of President Forrester, pledged a toast to the flag of the United States and its progress to victory, and Mr. Brown followed in a toast to the "boys" and their safe homecoming. These were drunk standing.

During the dinner patriotic songs were sung, and fervent wishes for the "boys' " welfare "over there" expressed enthusiastically.

For the Jobbers Committee Mr. Jones stated that a paint table had been arranged for at the Chamber of Commerce and invited members of the club to gather round it at the noon hour.

Mr. King, chairman of the Publicity Committee, proffered his resignation on account of added cares and responsibilities. In view of the conditions this was accepted with regret, and James Tarr appointed in his place.

The secretary stated that an honor roll containing all of the names of those who had gone into war service up to June 13, 1918, had been prepared, and presented same for approval.

President Forrester appointed a permanent War Service Committee, made up of Messrs. Smith, Sovereign and Butts, the latter as chairman.

The Nominating Committee, through Mr. Rainey, named Chas. J. Caspar and E. E. Zimmermann for delegates, and Jas. Forrester and H. D. Butts for alternates to the Boston convention, and R. F. Rainey was chosen to represent the club on the Board of Directors of the National Paint, Oil and Varnish Association for the ensuing year. The club ratified these nominations.

Acknowledgements of the sympathetic messages sent to the families of the late W. H. Rickenbach and John Thompson were read, and a further expression of sympathy was expressed by the rising of the entire meeting. Mr. Caspar spoke feelingly of the deceased members, and moved that the secretary prepare a suitable memorial to be sent to the respective families, and that same be spread upon the minutes of the meeting. This was duly seconded and carried.

Mr. King presented his resignation as chairman of the bowling club, but in view of his excellent record the club would not accept, and elected H. D. Butts as vice-chairman to assist him.

A reference to the closing movement inaugurated by the Fuel Administration's order for the conservation of light and power from 7.30 to 10 a. m., brought forth a suggestion, and later a motion, from Mr. Caspar that a committee be appointed to interview the Fuel Administrator immediately for definite information upon the order's provisions, and that the result of the committee be referred to the secretary for immediate notification to the club members. This was seconded and carried, and Messrs. Rainey, Michel, Eggers and Murray, the latter being chairman, were appointed.

TEXAS COTTONSEED AND CATTLE MEN AGREE AS TO COTTONSEED PRODUCTS SAMPLING

At a called meeting of the Texas Cottonseed Crushers' Association, in Dallas, President J. Webb Howell was authorized to appoint a committee to meet with a similar committee from the Cattle Raisers' Association of Texas and representatives of the Feed Control Service Division, College Station, Texas.

The conference was held at Fort Worth, September 17. The Texas Cottonseed Crushers' Association committee consisted of R. F. Isbell, chairman; C. N. Thatcher and E. H. Young. The Cattle Raisers' Association committee consisted of J. S. Todd and E. B. Spiller. F. D. Fuller, chief, and James Sullivan, executive secretary, appeared for the Feed Control Service Division.

The sampling and analysis matter having been agreed upon, Mr. Isbell asked the cattle raisers' committee to unite with the cottonseed crushers' committee in an appeal to the Feed Control Service to change the regulations made last year whereby cake or meal containing less than 43 per cent. protein are designated as "cottonseed feed." Mr. Isbell called attention to the Federal Food Administration's rule making 36 per cent. the minimum and the regulations, similar to that, in all other States than Texas.

The committee has made the following report to President Howell:—

"We, the committee appointed by the Texas Cottonseed Crushers' Association, to confer with the Texas Feed Control on rules and regulations for shipping and sampling cottonseed meal and cake, met with Mr. Fuller and Mr. Sullivan, of the Feed Control, together with Mr. Spiller and Mr. Todd, representing the Texas Cattle Raisers' Association, in Fort Worth, on September 17, 1918.

"We regret to report that the cattle raisers refused to join with us to recommend to the division of the Feed Control Service a change in the Feed Control rules whereby our product would be put on an equal classification in recognizing cottonseed meal or cake as such when containing 36 per cent. or more protein, as is now the case in all other States except Texas.

"We, therefore, recommend that all meal and cake possibly be sold only where our products are recognized as such when containing 36 per cent. protein and over.

"Respectfully,
"R. F. Isbell, Chairman;
"C. N. Thatcher,
"E. H. Young,
"Committee."

The committee's report to President Howell follows:—

Memorandum of Agreement.

We, the undersigned, acting for and in behalf of the Texas Cottonseed Crushers' Association and the Cattle Raisers' Association of Texas, have come to the following agreement with the Division of Feed Control Service, College Station, Tex., regarding sampling of cottonseed products at points of origin of shipment during the crushing season of 1918-1919, on this, the seventeenth day of September, 1918, at the office of the Cattle Raisers' Association of Texas, Fort Worth, Tex.:—

It is agreed—

1. That the manager of each cottonseed oil mill in Texas is to have a sample drawn from each full carload shipment of cottonseed products originating at said mill during the crushing season of 1918-1919, commencing with the first full carload shipment after the execution of an affidavit.

2. That the Division of Feed Control Service, College Station, Tex., is to furnish each cottonseed oil mill in Texas with official instructions for the taking of samples.

3. That each sample taken in accordance with official instructions furnished by the Division of Feed Control Service, College Station, Tex., is to be sent at once to a recognized commercial chemist for analysis.

4. That in case any shipment is found, upon analysis by said commercial chemist, to show a deficiency from guarantee equal to or exceeding one-half of 1 per cent. crude protein, as determined by an official method adopted by the Association of Official Agricultural Chemists, a rebate, at the rate of $1.40 per unit of crude protein, shall be paid to the purchaser.

5. It is agreed that the Division of Feed Control Service, College Station, Tex., will continue to take official samples in the regular way, and that the analysis resulting from these samples will be considered in all adjustments.

6. It is agreed, further, that the Division of Feed Control Service, College Station, Tex., will designate as recognized commercial chemists those who are engaged only in commercial analytical work, who have the proper facilities and agree to the following:—

A. To use an official method of the Association of Official Agricultural Chemists in the determination of crude protein.

B. To send two copies of each certificate of analysis to the person or firm sending the sample, and one copy to the Division of Feed Control Service, College Station, Tex.

C. To send the Division of Feed Control Service, College Station, Tex., on request, a sealed portion of any sample analyzed under this agreement, for check analysis by said division.

7. It is further agreed the information regarding each sample sent to a recognized commercial chemist is also to be furnished said chemist at the time sample is sent, as follows:—

A. Name and address of the manufacturer.
B. Name and address of the purchaser.
C. Brand name and protein guarantee.
D. Car initials and number.
E. Number of tons in shipment.
F. Number of sacks sampled.
G. Date of shipment.

8. It is further agreed that a certificate of analysis on each full carload shipment will be sent by the seller to the purchaser of said shipment.

Committeemen for the Texas Cottonseed Crushers Association:—
R. F. Isbell, Chairman.
C. N. Thatcher.
E. H. Young.

Committeemen for the Cattle Raisers Association of Texas:—
J. S. Todd.
E. B. Spiller.

Division of Feed Control Service, College Station, Tex.:—
F. D. Fuller, Chief.

Pleasant Surprise for George C. Morton on His Fiftieth Birthday.

A most pleasant surprise party was given to George C. Morton, president of the National Paint, Oil and Varnish Association, at his home in Roxbury, Mass., on Monday evening, September 23, the occasion being his fiftieth birthday. When Mr. Morton returned home early in the evening he found sixty of his fellow workers in the Carpenter-Morton Company, and other relatives and friends, assembled, ready to extend congratulations and to wish him many happy returns of the day.

In behalf of his fellow workers and friends gathered, Mr. Morton was presented with a solid gold Waltham watch and a set of gold-mounted pearl shirt studs, the presentation being made by John W. Campbell, one of the directors of the Carpenter-Morton Company, to which Mr. Morton responded most fittingly. Mrs. Morton was also the recipient of a bouquet of beautiful roses, the presentation being made by Miss Alice W. Bonney. A social time followed, during which refreshments were served and patriotic songs were sung, accompanied by an orchestra.

Cincinnati Paint, Oil and Varnish Club Holds Annual Election.

The fall meeting of the Cincinnati Paint, Oil and Varnish Club, held on the evening of Thursday, September 19, at the Hotel Metropole, was turned into a dinner in honor of the recent draft registrants, as they were permitted to stand on the call of the chairman in order that they might receive due recognition. Interest naturally centered on the annual election of officers, however, which resulted as follows:—President, R. A. Becker, succeeding Joseph A. Richmond; vice-president, George C. Wuenker; secretary, Frank Shrader, re-elected, as usual; treasurer, George W. Schneider, Jr.; Board of Control, Charles J. Hardig, C. M. Durbin and W. S. Gould. A committee, of which George R. Ebersole was chairman, presented resolutions on the death of Ira D. Washburn, for many years prominent in the trade, who died several months ago.

Cleveland Paint, Oil and Varnish Club September Meeting.

One of the best and most enthusiastic meetings of the year was held by the Cleveland Paint, Oil and Varnish Club at the Cleveland Athletic Club, Tuesday evening, September 24, 1918. Covers were laid for fifty and the usual war-time dinner was served.

A great deal of business was transacted. The following delegates and alternates were elected to represent the club at the Boston convention:—

Delegates—Victor Weigle, F. M. Clapp, E. T. Holmes, A. H. Foss, H. O. Gibson, E. R. Smead. Alternates—George W. Flynt, M. B. Flynt, Andrew Lamb, E. R. Read, H. W. Galley, E. W. Tylee.

George W. Truxall, chairman of the Membership Committee, presented three applications for membership, and they were elected by unanimous vote. The new members are:—A. V. Andrews, of the Muralo Company, New Brighton, N. Y. H. A. Lynn, of the Crawford Specialty Mfg. Company, Cleveland, Ohio. W. K. Einstein, of Continental Products Company, Cleveland, Ohio.

A special assessment of $5 will be levied upon each member to purchase a block of Liberty Bonds of the Fourth Issue.

B. T. Day, who has just returned from a trip South, spoke on the Naval Stores situation.

W. A. Alpers spoke on "Paint Trade Mutual Fire Insurance."

The meeting adjourned after a very fine address by Charles A. Woodward on "The Human Element in Business and Conditions We Must Face After the War."

OLIVE OIL WARNING.

Federal Food Inspectors Keeping Close Watch on Sales of Substitutes as Genuine.

Washington, Sept. 30, 1918.

Warning against adulterated olive oil has been given by the United States Department of Agriculture and the Federal food inspectors have been instructed by the officials in charge of the enforcement of the Federal Food and Drugs Act to inspect interstate shipments of olive oil, in order to prevent the sale of interstate commerce of cheaper vegetable oils under the name of olive oil.

Very little olive oil is now being imported, the Federal authorities in the Bureau of Chemistry point out, and the domestic olive oil supply is not sufficient to meet the demand. The abnormally high price of genuine olive oil has tempted unscrupulous dealers to mix cheaper vegetable oils with a little genuine olive oil and sell the mixture labeled as olive oil. Cottonseed oil, corn oil and soy bean oil are the principal substitutes used, the Federal inspectors say.

Several seizures have been made and a number of prosecutions are now pending in the Federal courts as the result of finding in interstate commerce products labeled "olive oil," which, upon analysis, were found to consist largely of cottonseed oil. This sale as olive oil is a fraud, and shipment in interstate or foreign commerce labeled as "olive oil" is a violation of the Federal Food and Drugs Act.

Washington Briefs.

A general denial of the charges made against it has been filed by the Bird-Archer Company, of New York city, producers of boiler compounds, chemicals and other preparations for the treatment and preservation of locomotives, in its answer to a complaint of the Federal Trade Commission. The company, in its answer, denies all the allegations in the complaint, and each count and paragraph, and states that it denies "all the matters and things" there charged, and "all and singular thereof."

Manufacturing druggists are particularly interested in a new rate increase asked by the American Railway Express Company, which Director General McAdoo has under consideration. The application is for a 10 per cent. increase. The company specifically asks permission to apply a flat increase of 10 cents per 100 pounds to existing commodity rates, and to advance first-class rates about 16 cents and second-class rates 12 cents a 100 pounds.

The Construction Division of the War Department has been authoried to erect a 4,000-kilowatt power plant, with all the necessary equipment, for the Milton Manufacturing Company, at Milton, Pa. This company is manufacturing supplies for the army, and its present power equipment is inadequate to meet the urgent demands of the army. The estimated cost of the buildings and equipment is $350,000.

Phenomenal increase of 324 per cent. in imports of pig tin from countries which have not hitherto been considered as of importance as a source of supply is officially reported by the United States Department of Commerce. Japan averaged shipments of 500,000 pounds monthly during June and July. The total tin imports in the United States for seven months, computing all ores as containing 60 per cent. of metal, were 106,053,256 pounds, or at the rate of 81,163 long tons per annum, which balances very nicely, the department points out, with the allocation to the United States by the Inter-Allies conference in London, of 80,000 tons for the year.

Arrangements have been made, with the approval of the American and associated governments, to permit the sale in Sweden of so-called "transit goods," originally destined for shipment to Russia but arrested in Sweden and still held there, upon which the Swedish government laid an embargo. American owners of such transit goods are advised by the War Trade Board that these consignments may now be sold through the Swedish organization, Aktiebolaget Transito, Stockholm, which will act as agents for the owner, to Swedish firms approved by the Interallied Trade Committee at Stockholm, and under guarantees satisfactory to this committee.

Testing drugs for the army is one of the important war works on which the Bureau of Chemistry, U. S. Department of Agriculture, is now engaged—not only at the headquarters in Washington, but at the offices in various cities throughout the country. More than a score of the best chemists have gone from the bureau to accept commissions in the army and to perform chemical and other laboratiry work directly for the War Department.

The Bureau of Aircraft production of the War Department has issued orders to manufacturers of aircraft that all engineering orders shall be disregarded unless received through the office of district managers of aircraft production and bear the signature of the Chief of Production Engineering, the Liaison Officer of the Production Division, Major D. D. Davis and the Production Engineering Officer of this district, Captain D. M. Liddell.

In eradication of the common barberry as a pest that causes rust of wheat and other cereals, the U. S. Department of Agriculture reports that its campaign is progressing successfully. The experts say that the Japanese barberry does not harbor the wheat rust.

OILSEED IN INDIA.

Final Forecast of Winter Crop Shows General Decrease.

The India Department of Statistics has issued its final general memorandum on the winter oilseed crop of 1917-18, according to United States Consul-General James A. Smith, at Calcutta. This forecast, the department states, is based on reports received from provinces where rape, mustard, and linseed are grown to any considerable extent. These provinces contain 98.8 per cent. of the total area under rape and mustard, and 98.9 per cent. of the total linseed area in British India. Of the native states, estimates are furnished only by Hyderabad and the native states in the Bombay Presidency (including Baroda).

Owing to the copious monsoon of 1917, conditions at sowing time were favorable, but the absence of winter rains adversely affected the growth of the crops in most of the important oilseed provinces.

The total area under rape and mustard is reported to be 6,884,000 acres, which is 6 per cent. above the finally revised area of last year. The total estimated yield is 1,111,000 tons, as against 1,191,000 tons, the revised final figure of last year, or a decrease of 7 per cent.

Rape and mustard are raised in certain other tracts in British India, and the average area so grown for the last five years has been some 72,000 acres, with an estimated yield of 12,000 tons.

The total area under linseed is placed at 3,737,000 acres, which is 5 per cent. above the finally revised area of last year. The total estimated yield is 507,000 tons, as against 526,000 tons, the revised final estimate of last year, or a decrease of 4 per cent.

As with rape and mustard, linseed is grown on certain other tracts in British India besides those tabulated. The average area so cultivated for the past half decade has been 37,000 acres, with an estimated yield of 5,000 tons.

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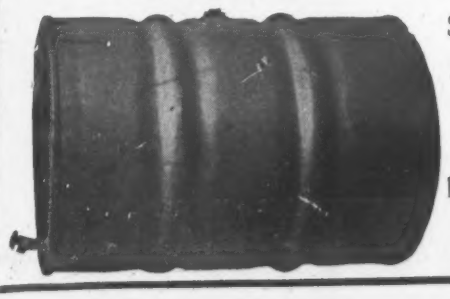

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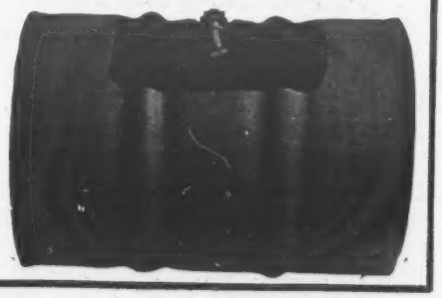

BIDS AND AWARDS.

ARMY MEDICAL AWARDS MADE.

Washington, Sept. 28, 1918.

The Medical Department of the Army announces awards as follows:—

Article and unit.	Quantity required.	Unit price.	Awarded to:
Acacia, pulvis, U. S. P., 1 lb. in carton	5,000	.43	McIlvaine Bros.
	2,000	.43	Hance Bros. & White.
	12,800	.43	Grubel & Co.
Acidum aceticum, U. S. P., 1 lb. in g. s. bottle, garten.	1,600	.30	Powers, Weightman, Rosen-
	1,000	.36	Merck & Co.
Acidum acetylsalicylicum, 1 lb. in carton	6,800	1.86	Bleeker Exp. & Tdg. Co.
	6,800	1.88	Heyden Chem. Works.
Acidum boricum, U. S. P., 1 lb. in carton	54,000	.148	Pacific Coast Borax Co.
Acidum, hydrochloricum, U. S. P., 1 lb. in colorless iron free g. s. bottle, packed in accordance with I. C. C. regulations	3,600	.38	Chas. Cooper & Co.
	6,400	.359	Hirsch Laboratories.
Acidum nitricum, U. S. P., 1 lb. in g. s., a. c. bottle, packed in accordance with I. C. C. regulations. Packed in sifted ashes	3,600	.41	Hirsch Laboratories.
	4,400	.39	Chas. Cooper & Co.
Acidum salicylicum, U. S. P., 1 lb. in cartons.	1,800	.81	Organic Salt & Acid Co.
	1,800	.81	Heyden Chem. Works.
Acidum sulphuricum, U. S. P., 1 lb. in g. s. bottle, packed in accordance with I. C. C. regulations	4,200	.3584	Hirsch Laboratories.
Acidum tannicum, pulvis, U. S. P., ½ lb. in carton garten.	2,400	.67½	Powers, Weightman, Rosen-
	2,400	.67	Mallinckrodt Chem. Works.
Acidum tartaricum, U. S. P., 1 lb. in carton	9,000	.85	Chas. Pfizer & Co., Inc.
Alumen pulvis, U. S. P. 1 lb. in carton	2,800	.12¾	McIlvaine Bros.
Ammonii chloridum, U. S. P., 1 lb. in carton	3,600	.28	Mallinckrodt Chem. Wks.
	3,600	.265	Grubel & Co.
Aqua ammonia, U. S. P., 4 lbs. in g. s. bottle, stopper paraffined. Packed 6 in case	3,600	.68	Larkin Co.
Argenti nitras, U. S. P., crystals, 1 oz. in a. c. bottle	25,200	.668	Powers, Weightman, Rosen-garten.
Argyrol or equivalent, 1 oz. in a. c. bottle. Submit sample	22,800	.41	E. R. Squibb & Sons.
	22,800	.41	Heyden Chem. Works.
Atropinae sulphas, 0.65 mgm. hypodermic tablets, 250 in bottle	2,200	.298	Norwich Pharm. Co.
	2,200	.30	Eli Lilly Co.
Balsamum peruvianum, U. S. P., ½ lg. in a. c., w. m. bottle	7,300	2.08	McKesson & Robbins.
	1,500	1.85	Lehn & Fink.
Barbital, 324 mgm. tablets, 500 in bottle	4,600	12.00	Abbott Laboratories.
Bismuthi subcarbonas, U. S. P., 1 lb. in carton.	1,800	3.18	Chas. Pfizer & Co.
	1,800	3.20	Powers, Weightman, Rosen-garten.
	1,800	3.20	Mallinckrodt Chem. Wks.
Caffeina citrata, U. S. P., 1 oz. in bottle	5,400	.44	E. R. Squibb & Sons.
	5,400	.43	Merck & Co.
Chlorbutanol, 324 mgm. capsules, 500 in bottle.	4,600	4.25	Parke, Davis & Co.
Cocainae hydrochloridum, U. S. P., ¼ oz. in bottle	44,000	2.35	Merck & Co.
Cupri sulphas, U. S. P., ¼ lb. in w. m. bottle.	1,100	.089	H. Kirk, White & Co., Inc.
	1,100	.10	Mallinckrodt Chem. Wks.
Digitalinum 1 mgm. hypodermic tablets, 250 in bottle	2,800	.30	Eli Lilly & Co.
Emotinae hydrochloridum, 22 mgm. hypodermic tablets, 250 in bottle	1,600	5.75	Eli Lilly & Co.
Emplastrum sinapis, U. S. P., 4 yds. x 6 inches, in tin, lid to be sealed with strip of adhesive plaster, packed 100 tins in a case. Cases lined with waterproof paper	9,200	...	Not yet awarded.
Eucalyptol, U. S. P., ¼ lb. in a. c. bottle	2,000	.436	McKesson & Robbins.
Ferri phosphas solubilis, U. S. P., 1 lb. in bottle, stopper paraffined	4,000	1.00	Chas. Pfizer & Co.
	2,800	1.05	Mallinckrodt Chem. Wks.
	4,000	1.00	Powers, Weightman, Rosen-garten.
Fluidextractum ipecacuanhae, U. S. P., ½ pint in a. c. bottle	1,200	2.45	Eli Lilly & Co.
Glycerinum, U. S. P., 1 gallon (10 lbs. to gallon), in tins	2,720	6.09¾	Cudahy Packing Co.
Hydragyri chloridum mite, U. S. P., 1 lb. in a. c. bottle	2,000	1.95	E. R. Squibb & Sons.
Hydrargyri chloridum mite, 32 mgm. tablets, 1,000 in a. c. bottle	4,400	.23	Bristol Myers Co.
	4,400	.23	O. F. Schmid Chem. Co.
	4,400	.23	Swan Myers Co.
Hydrargyri salicylas, U. S. P., 1 oz. in bottle.	3,600	.23	E. R. Squibb & Sons.
	3,600	.2225	Powers, Weightman, Rosen-garten.
	3,600	.23	Mallinckrodt Chem. Co.
Iodum, U. S. P., ¼ lb. in a. c., g. s. bottle, stopper paraffined	60,000	1.04	Chas. Pfizer & Co.
	30,000	1.09	Powers, Weightman, Rosen-garten.
Magnesii carbonas, pulvis, U. S. P., 1 lb in tin	1,800	.25	Leon Hirsch & Sons.
Menthol, U. S. P., 1 oz. in a. c., w. m. bottle, stopper paraffined	4,800	.27	F. S. Betz & Co.
Methylis salicylas, U. S. P., 1 lb. in a. c. bottle	800	.87½	Heyden Chem. Works.
Morphinae sulphas, 8 mgm. hypodermic tablets, 250 in a. c. bottle	9,400	.90	Eli Lilly & Co.
	2,500	.88	John Milliken & Co.
	2,500	.90	Swan, Myers Co
Normal saline solution tablets, 200 in w. m. bottle, packed 50 bottles in a case. Formula and directions on each bottle. Formula: Sodii chloridum c. p. gms. 1.0625; eight tablets to a liter make a 0.85% solution of sodium chloride	18,000	...	Not yet awarded.
Oleum auranti, U. S. P., ½ lb. in a. c. bottle, stopper paraffined	800	.92	Geo. Lueders & Co.
Oleum caryophyll, U. S. P., ½ lb. in a. c., g. s. bottle, stopper paraffined	900	1.55	Geo. Lueders & Co.
Pepsinum, U. S. P., ½ lb. in w. m. bottle	600	2.00	Fred'k Stearns & Co.
	750	2.00	Parke, Davis & Co.
Petrolatum, U. S. P., 5 lb. in tin, packed 20 in a case	33,200	.59	H. J. Baker & Bro.
Petrolatum, liquidum, U. S. P., or better, heavy, 1 pint in bottle. Submit sample	30,000	.35	E. R. Squibb & Sons.
Petrolatum, liquidum, U. S. P., or better, heavy, 5 gallons in tin. Submit 1 pint sample	30,000	.33⅓	Standard Oil of N. J.
	3,600	8.55	Standard Oil of N. J.
Phenol, U. S. P., crystallized, 1 lb. in a. c. bottle, stopper paraffined. Packed 50 in a case	36,000	.50	Mallinckrodt Chem. Wks.
	54,000	.49	Merck & Co.
Phenol, U. S. P., crystallized, 5 lbs. in tin. Packed 20 in a case	4,000	2.40	Mallinckrodt Chem. Wks.
	6,000	2.35	Merck & Co.
Phenylis salicylas, U. S. P., ½ lb. in carton	2,000	.73	Organic Salt & Acid Co.
	2,000	.77	Heyden Chem. Works.
Pilulae aloini compositae or tablets, chocolate coated. 500 in bottle. Formula: Aloinum, U. S. P., mgm. 8; oleoresin capsici, U. S. P., mgm. 227; resinae podophylli, U. S. P., mgm. 8; strychnina, U. S. P., mgm. 8	6,800	.20	Bristol Myers Co.
	6,000	.21	O. F. Schmid Chem. Co.
Pilulae catharticae compositae, or tablets, U. S. P., 1,000 in bottle	3,100	.93	McKesson & Robbins.
	500	.86	John T. Milliken & Co.
Plumbi acetas, U. S. P., 1 lb. in tin	13,600	.295	Huron Chem. Co.
Potassii hydroxidum, U. S. P., ½ lb. in hard glass bottle, stopper paraffined	800	.94	H. J. Baker & Bro.
Potassii iodidum, U. S. P., 1 lb. in w. m., a. c. bottle, stopper paraffined	2,500	3.33¾	Chas. Pfizer & Co.
	2,000	3.40	Merck & Co.
	2,000	3.40	Mallinckrodt Chem. Wks.
Quininae sulphas, crystals, U. S. P., 1 oz. in bottle, or tin	10,000	.97	Powers, Weightman, Rosen-garten.
	5,000	.98	N. Y. Quinine & Chem.
Quininae sulphas, 200 mgm. tablets, 1,000 in a. c. bottle	6,400	6.09	McKesson & Robbins.
Sapo mollis, U. S. P., equivalent, in 28 lb. kegs. Submit sample	4,100	4.94	Mokohan Antiseptic Co.
Sodii acetas, U. S. P., 1 lb. in bottle	5,100	.33 7/10	Powers, Weightman, Rosen-garten.
Sodii bicarbonas, U. S. P., 1 lb. in carton	18,000	.05	Leon Hirsch & Son.
Sodii bicarbonas, commercial, 100 lbs. in kegs.	5,000	3.92	McIlvaine Bros.
Sodii boras, pulvis, U. S. P., 1 lb. in carton	10,800	.11½	Pacific Coast Borax Co.
Sodii boras, pulvis, 100 lbs. in kegs	1,440	7.50	Pacific Coast Borax Co.
	1,440	7.50	Chas. Pfizer & Co.
Sodii bromidum, U. S. P., 1 lb. in a. c., bottle, stopper paraffined	3,400	.64	Powers, Weightman, Rosen-garten.
Sodii carbonas, monohydratus, U. S. P., 1 lb. in w. m. bottle	5,000	.185	Mallinckrodt Chem. Wks.
Sodii salicylas, U. S. P., 1 lb. in carton	2,500	.87	Monsanto Chem. Works.
	500	.87	Merck & Co.
	3,400	.85	Heyden Chem. Works.
Strychninae sulphas, 1 mgm. hypodermic tablets, 250 in bottle	10,000	.085	Parke, Davis & Co.
	5,000	.084	Norwich Pharm. Co.
	5,000	.08¼	Milliken Co.
	10,000	.08¼	Frank S. Betz.
Sulphur, roll in barrels of not more than 300 lbs.	144,000	.0385	Ralph L. Fuller & Co., Inc.
Talcum, U. S. P., 5 lbs. in carton	720	...	Not yet awarded.
Thymol, U. S. P., 1 oz. in bottle, stopper paraffined	6,200	...	Not yet awarded.
Tinctura benzoini composita, U. S. P., permitting use of technical storax, 1 pint in bottle.	500	.93	Jos. Triner Co.
	2,300	.98	McKesson & Robbins.
Tinctura nucis vomicae, U. S. P., 1 pint in bottle	1,000	.60	Eli Lilly & Co.
	1,000	.58	Nelson Baker & Co.
	500	.55	Jos. Triner Co.
Tinctura opii, U. S. P., 1 pint in a. c. bottle	3,000	2.72	McKesson & Robbins.
	1,000	2.75	Pitman-Moore Co.
	4,200	2.64	Maltbie Chemical Co.
Trochisci ammonii chloridi, U. S. P., or tablets, 250 in bottle	10,000	.2015	United Drug Co.
	10,000	.21	Sharp & Dohme.
Unguentum hydragyri, 10% mercury, petrolatum base, 1 lb. in well lacquered friction top tins	11,800	.88	Parke, Davis & Co.
Zinci oxidum, U. S. P., 1 lb. in carton	2,800	.1975	Puritan Pharm. Co.
Zinci sulphas, U. S. P., 1 lb. in carton	14,400	.0914	Puritan Pharm. Co.

Medical Supply Bids Wanted.

Sealed proposals will be received until 2 o'clock p. m., October 7, 1918, at the United States Indian Warehouse, 308 South Green street, Chicago, Ill., for the following supplies:—

Medicines.—64 bottles acetic acid, U. S. P., in 4-ounce bottles; 66 bottles compressed tablets, tannalbin, N. N. R. (albumen tannate), 5 grains, in bottles of 100; 62 bottles compressed tablets, trinitrophenol, U. S. P. (picric acid), in bottles containing 4 ounces; 115 bottles epinephrine, N. N. R., 1-1000, in bottles containing 1 ounce; 38 tubes homatropine hydrobromine, U. S. P., ¼ grain, in tubes of 10 tablets; 102 cans quinine, sulphate, U. S. P., in cans containing 5 ounces (specify brand bid on); 106 boxes quinine and urea-hydrochloride, U. S. P., 1 per cent., in boxes of six 5 cc. ampoules.

G. P. O., Soap Bids Received.

The following bids were received September 11 by the purchasing agent, Government Printing Office, Washington, D. C., for furnishing 2,000 pounds chip soap:—

Leon Hirsh & Son, 14c. pound.
Swift & Co., 16.47c. and 13.86c.
Procter & Gamble Dist. Co., 16.17c.
Armour & Co., 16.17c. and 13.875c.
D. T. Buzby & Co., 13.75c. and 16.17c.
Browning & Middleton, $300.

G. P. O., Dry Color Bids Received.

The following bids were received September 23 by the purchasing agent, Government Printing Office, Washington, D. C., for furnishing 500 pounds crimson geranium lake dry color (blue shade):—

Jaenecke-Ault Co., $1.25.
Sinclair & Valentine Co., $1.25.
Ault & Wiborg Co., $2.60 and $1.90.
Monroe, Lederer & Taussig, $1.
G. Siegle Co., 70c. and $1.30.
Imperial Color Works, Inc., $1.10, $2.45 and $1.70.
E. I. du Pont de Nemours & Co., $2.50.
Erdman Color Co., Inc., $1.05.

Naval Opening September 24, Late Bids.

The following late bids were received under the naval opening of September 24:—

Bidder 121. Foy Paint Co., Cincinnati, Ohio, class 905, $1,053; 906, $1,075; 907, $300; 908, $955; 909, $2.18; 910, $1.64; 911, 32.25c.

Navy Supplies Wanted.

Bureau of Supplies and Accounts, Navy Department, Washington, D. C.—Sealed proposals are wanted, under schedules as indicated below, for furnishing miscellaneous supplies for the navy. The date of opening is noted at the end of each paragraph. Where no date is shown the time of opening has not been decided, but will be in the near future:—

Schedule 1971, for various deliveries, calcium phosphide, and for Mare Island and Puget Sound, 5,000 gallons glycerine, opening of October 29.

Schedule 1972, for various deliveries, soda ash, 9,000 gallons aluminum sulphate, 300,000 pounds calcium carbide, caustic potash, cyanide potassium, pumice and rotten stone, silver nitrate, bicarbonate sodium, caustic soda, cyanide sodium and 1,200 pounds powdered soapstone.

Schedule 1973, for various deliveries, calcium chloride, 1,800 ounces orange methyl, nitric acid, 500 pounds yellow phosphorous, carbonate potassium, silver nitrite; sodium silicate, 40,000 pounds sulphur and a quantity of tripoli.

Schedule 1974, for various deliveries, 70,000 pounds salt water soap, sodium fluoride, liquid soap, 97,500 pounds laundry soap, cleaning and polishing soap, 28,000 pounds soap powder, 3,000 pounds insect powder, 10,000 pints liquid metal polish, 4,000 pounds naphthaline and 2,000 pounds moth balls; for New York, 150 pounds flake camphor and 200 gallons pest exterminator; for various deliveries, 14,000 pounds aqua ammonia, and for Norfolk and Charleston, polishing compound.

Paint Bids Wanted.

Sealed proposals will be opened by the Superintendent of Lighthouses, Tompkinsville, N. Y., until 2 o'clock p. m., October 10, 1918, for 30,000 pounds red lead, 4,300 yards khaki colored canvas and 7,000 gallons mixed paints. Information upon application to the above office.

U. S. Indian Warehouse, Chicago, Ill.—Bids are wanted October 14, 1918, for 2,800 pounds dry chrome green, 3 slating brushes, 50 pounds para red, 100 pounds pitch. For information address above.

U. S. Indian Warehouse, Chicago, Ill.—Sealed proposals will be received at this office until October 14, 1918, for furnishing paint, etc. For information address the superintendent.

Medical Bids Wanted.

Medical Circular 22—General Purchasing Office, Medical Department, U. S. Army, Washington, D. C.—An award will be made on October 7, 1918, under Circular 22 for furnishing 200,000 bottles argyrol and 600,000 bottles protargol equivalent. For information address as above.

Medical Circular No. 17—Purchasing Office, Medical Department, U. S. A., Washington, D. C.—Bids are wanted October 11, under Circular 17, for furnishing a miscellaneous quantity of drugs and chemicals. Blank proposals, etc., on application to above.

Medicines, Etc.—U. S. Indian Warehouse, 308 South Green street, Chicago, Ill.—Sealed bids are wanted until October 7, 1918, for a quantity of medicines, instruments, surgical dressings, etc. For information address as above.

Rubber Goods—Medical Supply Depot, 628 Greenwich street, New York city—Bids are wanted September 30, 1918, for the following rubber goods:—43,200 atomizers, 43,200 rubber bags, 15,000 ice bags, 14,400 bandages, 14,400 bougies, 180,000 tips for crutches, 30,000 cushions, open center; 7,200 do., surgical; 120,000 pairs rubber gloves, 1,800 patching outfits for rubber gloves, 240,000 pairs rubber sole slippers, 1,800 hard rubber powder sprinklers, 18,000 syringes, 5,400 stomach tubes and 42,000 drainage tubes. For information apply above.

Crude Oil Bids Wanted.

U. S. Engineer Office, 725 Central Building, Los Angeles, Cal.—Sealed proposals for furnishing crude oil at San Pedro, Cal., will be received here until 11 a. m., October 16, 1918, and then opened. Information on application.

Cottonseed Cake Bids Wanted.

Office of the Commissioner of Indian Affairs, Washington, D. ..—Sealed proposals will be received until 2 p. m., October 10, 1918, for furnishing cottonseed cake for Fort Belnapl, Mont., and Miscalero, N. M. For information address Cato Sells, commissioner.

Naval Opening September 20.

Bids were received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., on September 20, for furnishing material and supplies for the naval service as follows:—

SCHEDULE 5791½.

Construction and Repair.

Class 626. Norfolk—6,000 lbs. borax. Bidder 23, $620; 28, $960; 62, $598; 67, $820; 80, $690.

Class 627. Norfolk—500 lbs. ammonia. Bidder 23, 39c.; 28, 29.5c. and 34.5c.; 57, 35.5c.; 67, 40c.; 80, 38.5c.; 87, 27c. and 20c.

Class 628. Norfolk—300 lbs. ground emery—Bidder 23, 9c.; 28, 19c.; 62, 11.5c.; 87, 15c.

Class 629. Norfolk—100 lbs. potash—Bidder 23, $2.50; 28, $3.50; 62, $3.60; 87, $4.50.

Class 630. Norfolk—500 lbs. cyanide potassium—Bidder 23, 44.75c.; 42, 42c. f. o. b.; 52, 31.5c.; 62, 44c.; 67, 36c.; 80, 38.25c.; 81, 34c.; 87, 50c.

Class 631. Norfolk—400 lbs. flux powder—Bidder 28, 45c.; 87, 25c.

Class 632. Norfolk—400 lbs. scaling powder—Bidder 28, 40c.; 87, 40c.

Class 633. Norfolk—25 lbs. oleorisin capsicum—Bidder 23, $5.75; 42, $4.66 f. o. b.; 59, $2.32; 62, $4.60; 67, $8; 87, $7.36.

Class 634. Norfolk—10 lbs. silver chloride—Bidder 23, $14; 28, $19.50; 52, $14.12; 62, $16; 67, $16; 80, $13.08; 87, $14.40.

Class 635. Norfolk—3,000 lbs. sodium fluoride—Bidder 15, 15c.; 23, 18c.; 28, 23c.; 60, 16.633c.; 62, 17c.; 67, 20c.; 80, 15.125c.; 81, 18.5c.; 83, 14c. f. o. b.; 87, 18c.

Class 636. Norfolk—1,800 lbs. tripoli—Bidder 28, $138.75; 87, $162.

Bidder 23, A. Daigger & Co., 54 West Kinzie street, Chicago.

28. John J. Grote & Co., Cincinnati, Ohio.

62. Shoemaker & Busch, Philadelphia, Pa.

67. Peter Van Schaack & Sons, 112-118 West Lake street, Chicago, Ill.

80. Charles Cooper & Co., 194 West street, New York city.

57. E. R. Squibb & Sons, 80 Beekman street, New York city.

87. Hachmeister-Lind Chemical Co., Pittsburgh, Pa.

42. Morganstern & Co., 49 Maiden lane, New York city.

81. West Disinfecting Co., New York city.

43. Magnus, Mabee & Reynard, New York city.

P. O. D. Tin Can Bids Received.

The following bids were received September 23 by the Purchasing Agent, Post Office Department, Washington, D. C., for furnishing item 1, 300 1 gallon cans; 2, 30 5-gallon cans.

American Can Co., 120 Broadway, New York city, item 1, $41 per 100; 2, $92.50 per 100.

W. B. Berte's & Son Co., Inc., Wilkes-Barre, Pa., item 1, $44 per 100.

Clark Can Co., Twelfth and Fitzwater streets, Philadelphia, Pa., item 1, $50 per 100; 2, $120 per 100.

Sexton Can Co., 228 Franklin street, Boston, Mass., item 1, 41c. each; 2, 90c. each.

The Conneaut Can Co., Conneaut, Ohio, item 1, $27.25 per 100; 2, $79.95 per 100.

National Can Co., 2366 East Grand Boulevard, Detroit, Mich., item 1, 30c. each; 2, 95c. each.

C. B. Porter Co., 128 North Second street, Philadelphia, Pa., item 1, $41 per 100; 2, $115 per 100.

Soap—66,000,000 Pounds of It—to Be Furnished Belgians and French.

Washington, Sept. 28, 1918.

There is an item for 66,000,000 pounds of soap in the program of supplies to be furnished from the United States to the 10,000,000 Belgians and French now within territory occupied by the Germans. The program calls for an expenditure of approximately $280,000,000 for purchase and transportation. The United States and allied governments have placed 200,000 tons of shipping for this purpose at the disposal of the relief commission. These are the vessels recently secured from the Swedish Government for non-war zone purposes.

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Business Opportunities.

(Continued from page 8.)

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25 barrels Ultramarine Blue G. H. at 22c. per pound; 25 barrels White Seal Zinc Oxide at 16c. per pound; 175 barrels Green Seal Zinc Oxide at 15c. per pound; 100 barrels Red Seal Zinc Oxide at 14½c. per pound; 100 barrels Lithophone 30 per cent. at 7¼c. per pound. Address BOX 829, care of this paper.

25 tons Recovered Manganese, 100 tons Fullers Earth, 200 Mesh; 1,000 pounds Golden Sulphuret Antimony, 1,500 pounds Crimson Sulphuret Antimony, 100 tons Ground Barytes, 350 pounds Acid Molybdic, 85 per cent.; 5 tons Ferro Titanium, 500 tons Chrome Ore, 45 per cent. and over; 650 pounds Metallic Magnesium, 10 tons Needle Antimony. Address BOX 826, care of this paper.

Sodium Aluminate, Iron Free; spot delivery; carloads. Address BOX 838, care of this paper.

300—55-gallon Black Iron, I. C. C. Drums; New; have not been used for any chemicals. Price $9 each. F. J. LEWIS MFG. CO., 2500 So. Robey St., Chicago, Ill.

11,000 pounds Dextrine, highest grade, packed in bags. Make us an offer. G. SIEGLE CO., Rosebank, S. I., N. Y.

Copper Still of 250 gallons capacity and several Copper Tanks, 300-500 Gallons Capacity; Electric Bottle Capping Machine. Address BOX 809, care of this paper.

Enamel Tanks, 12 tanks 4—30-inch rings by 8 feet diameter, 3,596 gallons, $348 each; two tanks 5 feet high by 8 feet diameter, 1,860 gallons, $300 each. Also Wooden Vats, Beer Filters, Copper Kettles, Beer Coolers and Refrigerating Machinery. CHAS. S. JACOROWITZ, Brewery Dismantler, 1382 Niagara St., Buffalo, N. Y.

Metanitranilene Plant. — Completely equipped plant for turning out one thousand pounds daily in New York City; contract of over $100,000 secured showing exceptional profit. Address BOX 839, care of this paper.

MISCELLANEOUS

Two Meade mills, No. 3, in good condition, in New York; for immediate delivery. Price $175 each. Two Robinson mills, 18-inch plate, good condition; price $150; in New York; for immediate shipment. One 5 h. p., 110 volt Westinghouse motor. Price $150. Address BOX 825, care of this paper.

Steam jacketed kettle, 300 gallon capacity, 6½ ft. diameter, about 2½ ft. high, with heavy agitating device, at $300.00 ex. factory Brooklyn. Also 26-in. basket Centrifugal and small Ross sifting and mixing machine. Address BOX 833, care of this paper.

2—30 in. by 30 in. Shriver Wood Plate and Frame Filter Presses, 1—No. 9 Sweetland Filter Press, 1—No. 10 Sweetland Filter Press, 5—8,000-gallon Oil Storage Tanks, 1—75 H. P., A. C., 550 Volt Motor. Address BOX 834, care of this paper.

One Sweetland filter, No. 2 23—16 in. leaves; 1 single stroke tablet machine; 1 No. 3 Mead Mill; 1 belt driven, dry vacuum pump, 150 cu. ft., good for 28 in.; 1 Gould triplex pump, 5 x 6, with 42 in. x 14 ft. pressure tank. Address BOX 830, care of this paper.

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Established Chicago organization with ample capital, now handling Anilines and Chemicals for the Textile, Tanning and Paper Trades, wants to make connections with manufacturers of products used in these trades and similar lines to represent them, or buy outright for exclusive territory in the Middle West. None but first sources considered. Address BOX 800, care of this paper.

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LATE MARKETS.

London Closing Cable.

The London market, as cabled by the Reporter's London correspondent, closed at the following positions:—

	This week.	Last week.
Quinine	5s. 6d.	5s.
Citric acid	4s. 3d.	3s. 9½d.
Lemon oil	4s. 8d.	4s. 7d.
Camphor slabs	6s. 7½d.	5s. 7d.

From this it is clear that the London market has been active and tending toward higher prices throughout the period. The advances in all these materials have been consistent for some time past, and they stand in very firm position in the English market. The recent drug auction brought out some interesting transactions. Parcels of lean Rio ipecac sold at 10s. and good quality gum benzoin was disposed of at from 11 to 17s. 6d., according to sale and quality of the gum.

St. Louis Oxide Market.

St. Louis, Mo., Sept. 25, 1918.

The demand for leaded zinc oxides for prompt shipment is reported greater than the available stocks by local manufacturers. In fact, orders for shipment throughout the fourth quarter are heavy. The portion of production over the balance of this year not already contracted for is said to be limited. This condition is attributed to two factors, namely, that most paint companies served by the oxide producers in this section of the country are busy on government orders, and, second, that there has been no advance in prices over those of the previous quarter. Indications are that business in this item would be even greater were it not for the fact that some paint manufacturers are troubled by the lack of labor. Sales are reported at a range of 9 to 10¼ cents per pound, according to quality. Additional sales of carload lots of lead-free zinc oxide to paint manufacturers working on navy orders are reported at 10¾c. per pound, f. o. b. nearby mills. Less than carload lots of lead-free zinc oxide are available here at 11 cents per pound, f. o. b. mills.

Duluth Closing Telegram.

Duluth, Minn., Sept. 27, 1918.

The Duluth flaxseed close today was:—Cash, $3.92½@3.95½; to arrive, $3.92½; September, $4.00½; October, $3.92½; November, $3.90½; December, $3.88. Receipts, domestic, 15,234 bushels. No bonded shipment; domestic, 2,403 bushels; no bonded stock; in store, 93,000 bushels; change in two days, 15,000 bushels.

St. Louis Barytes Market.

St. Louis, Sept. 26, 1918.

Barytes producers continue to quote their product at the advanced prices announced some weeks ago, and report that sales are being made at the new scale. The increased cost of production, particularly the difficulties of labor and transportation, have been explained to the consumers, and apparently accepted by them. Sales are reported at $23 to $27 a ton f. o. b. mill for the No. 1 floated grade, and at $21 to $25 per ton f. o. b. mills for the off color Missouri grade.

JAPAN DRUG MARKET.

Tokio, Japan, Aug. 19, 1918.

AMMONIUM SULFOICHTHYOLATE—Is being turned out as the result of experiments for some time past. It is received by the medical profession with satisfaction and given a good market. The manufacturers offer this drug at 1.50 yen per pound.

ATROPINE—Has advanced a little since last report on heavier demand. It is offered at 11 yen per 3½ grams. The present quotation is an increase of 0.50 yen on last week.

CAMPHOR—Has slightly gone up since last report, but the general market condition is unaltered. Dealers are short of cargo and cannot meet any foreign demand. Camphor in tablets is quoted at 25.50 yen per 100 pounds. White oil is quoted at 27.50 yen per picul and red oil at 25.50 yen per picul.

COCAINE—Has improved markedly, being in heavier request. Cocaine hydrochloride is quoted at 24 yen per ounce, which is an increase of 1 yen on last week.

COD LIVER OIL.—Owing to the approach of the fall, cod liver oil is in a slightly more active mood. Tokio exporters quote it at 0.60 yen per pound, which figure is an increase of 0.05 yen on last week.

IODINE.—Owing to the exceedingly large shipment made so far, the visible stock of iodine and potash iodide in Japan has become unusually small, and dealers here find it very difficult to meet any more substantial demand. Prices are accordingly on the up grade. Iodine is now quoted at 7.60 yen per pound, while potash iodide is offered at 6.30 yen per pound. It will be some time before the supplies are replenished with this year's output, for manufacturers are now engaged in harvesting sea weeds, and their manufacture of crude goods is not yet started.

MENTHOL—Shows no appreciable change, canes being quoted at 570 yen per 100 pounds. Although its foreign demand is rather slack at present, the price is well maintained on account of the anticipated reduction in this year's crop in Hokkaido.

MORPHINE—Has declined somewhat heavily since last report on account of the supplies being plentiful. Morphine hydrochloride is quoted at 42 yen per ounce, which figure is a decline of 3 yen from last week.

A new drug—phthisol—has been turned out at Osaka, under the supervision of Prof. Fujiro Katurada, as a substitute for carbonate of guaiacol and carbonate of creosote. The manufacturer says that those imported druugs for the diseases of the respiratory organs have lately become very short in Japan, and medical men have experienced much inconvenience. Phthisol can be turned out of some materials which are found in abundance in Japan, and is comparatively cheap as a remedy for the diseases of the respiratory organs, its effectiveness being even greater than carbonate of guaiacol or carbonate of creosote. The Tokio agent for the manuufacturer offers this new drug at 18 yen per pound.

QUININE—Is once more soaring up in Japan on buyers' heavier requests. Quinine sulphate is quoted at 1.70 yen per ounce, against 1.60 yen last reported.

WAX.—The foreign demand for Japan wax shows little sign of slackening, and in the market here the visible supply is as small as ever. The shipment of white wax has particularly been brisk lately causing a boom of 1 yen per picul in this quality. The ruling prices for white wax are:—

Howo, per picul	52.50 yen
Sanjirushi, per picul	51.00 yen
Nijirushi, per case of 60 kin	47.50 yen

Gray wax halts round the last marks now on account of its sharp boom lately. Its ruling prices range between 42.50 yen per picul and 36.30 yen per picul.

(In reading this report the following values and weights will be found of assistance:—Koku, 4.765 gallons; picul, 133⅓ pounds; kwan, 8.2673 pounds; kin, 1.3227 pounds; yen (100 sen), $0.4984.)

Drug Trade in Baltimore Hard Hit by Labor Situation.

Baltimore, Sept. 27, 1918.

Drug manufacturers and wholesale druggists of this city have been hard hit by the labor situation, according to a statement made by the manager of one of the largest plants. Incidentally, this official stated that the Central Government Employment Bureau, instead of being a help to the drug trade in the matter of securing unskilled labor, had proved a hindrance.

"Our work here," he said, "while not exactly of a technical nature as far as the average employe is concerned, does require a certain degree of skill, to get which one must put in some time at a sort of apprenticeship. During this educational period, depending upon the adaptability of the individual, the time spent is more or less of a dead loss to us. Even if we could pay the wages offered by those engaged in government construction work, the class of men the Government Employment Bureau would send us is not as a rule the kind who stick long at a job; and to depend upon this source of labor would be simply ruinous to our business. On the other hand, the government has prohibited us from advertising for help, and we are placed in the position, being an essential industry, of having to depend upon the supply of workers which to us does not exist.

"We want men here who are family or home men, and we pay good wages to the steady kind, but we have no use for the fly-by-nights, who are only an expense and a source of worry. Unfortunately, however, even some of our own force have been lured away by offers of big wages, but many have been glad to come back after they had been made aware of the real conditions existing in the government work paying the high wages."

Asked concerning the extent to which he had tried the substitution of women for the men drawn away into the war or who for other reasons had left, the official in question said the drug industry had always employed many women and girls, and that since the beginning of the war these had been added to wherever possible, but there remained work which only men could do, and it was in those departments where the greatest difficulties had been experienced. He said he thought conditions in Baltimore resembled those in the drug trade throughout the country, and the East especially. There was a great scarcity of labor, and the prospect of replenishing the supply seemed at present to be anything but promising.

EXPORTS.

(Continued from page 117.)

SPONGES—Canada, 81 lbs, $47; Mexico, 6 lbs, $12; Peru, 6 lbs, $29; British India, 33 lbs, $66; Australia, 374 lbs, $1,270; Philippine Islands, 47 lbs, $175; total, 547 lbs, $1,599

STARCH—Mexico, 28,458 lbs, $2,477; China, 2,587 lbs, $255; British India, 320 lbs, $32; Straits Settlements, 648 lbs, $60; Dutch East Indies, 250 lbs, $25; Hong Kong, 680 lbs, $68; Japan, 200 lbs, $20; German Oceania, 900 lbs, $81; Philippine Islands, 4,230 lbs, $428; total, 38,273 lbs, $3,446

SULPHUR ORE—Guatemala, 161 tons, $1,100; Salvador, 1 ton, $94; Mexico, 40 tons, $2,250; China, 1,002 lbs, $93; Korea, 288 tons, $24; Straits Settlements, 12 tons, $1; Philippine Islands, 495 tons, $39; total, 1,854 tons, $3,601

TANNING EXTRACT—China, $873

TURPENTINE TAR—Costa Rica, 4 bbls, $58; Guatemala, 2 bbls, $19; Honduras, 3 bbls, $27; Nicaragua, 1 bbl, $15; Mexico, 3 bbls, $42; China, 2 bbls, $28; Dutch East Indies, 60 bbls, $1,000; French Oceania, 2 bbls, $18; German Oceania, 1 bbl, $13; total, 78 bbls, $1,220

SPIRITS—Guatemala, 30 gls, $25; Nicaragua, 60 gls, $48; Salvador, 10 gls, $7; Mexico, 341 gls, $282; Bolivia, 750 gls, $535; Chile, 10,030 gls, $7,335; Colombia, 10 gls, $8; Peru, 1,000 gls, $840; Dutch East Indies, 700 gls, $470; Australia, 38,600 gls, $25,684; New Zealand, 800 gls, $580; French Oceania, 200 gls, $100; German Oceania, 20 gls, $14; Philippine Islands, 7,050 gls, $4,445; total, 59,001 gls, $40,373

VARNISH—Canada, 50 gls, $30; Guatemala, 274 gls, $262; Salvador, 20 gls, $20; Mexico, 205 gls, $314; Chile, 24 gls, $60; Peru, 178 gls, $180; British India, 2,300 gls, $2,215; British East Indies, 27 gls, $110; Dutch East Indies, 850 gls, $2,092; Japan, 1,507 gls, $1,549; Australia, 341 gls, $673; Philippine Islands, 1,050 gls, $2,266; total, 6,826 gls, $9,821

WAX, BEES—Canada, 10 lbs, $5; Costa Rica, 60 lbs, $20; Chile, 5 lbs, $3; total, 65 lbs, $28

WHITE LEAD—Canada, 12,000 lbs, $1,440; Guatemala, 3,075 lbs, $366; Nicaragua, 100 lbs, $12; Mexico, 4,600 lbs, $552; China, 11,200 lbs, $1,232; British India, 67,200 lbs, $7,392; Dutch East Indies, 19,390 lbs, $2,292; Hong Kong 15,680 lbs, $1,800; Australia, 110,300 lbs, $12,219; New Zealand, 68,164, $8,098; Philippine Islands, 134,100 lbs, $15,914; total, 448,669 lbs, $51,673

WOOD PULP—Canada, 39 tons, $857

ZINC OXIDE—Canada, 1,750 lbs, $170; Salvador, 500 lbs, $80; Mexico, 1,390 lbs, $244; Bolivia, 13,500 lbs, $2,209; Chile, 14,440 lbs, $1,672; Peru, 15,000 lbs, $2,063; Dutch East Indies, 70,000 lbs, $12,603; Hong Kong, 15,160 lbs, $2,527; Australia, 5,900 lbs, $1,005; German Oceania, 5,668 lbs, $736; Philippine Islands, 23,225 lbs, $3,644; total, 166,533 lbs, $26,944

FULLER'S EARTH.

Output in 1917 in United States Totalled 72,870 Tons, Valued at $776,632.

The production of fuller's earth in 1917, as shown by a report published by the United States Geological Survey, Department of the Interior, was 72,870 short tons, valued at the mine at $776,632, or $10.66 a ton. The increase over 1916 was 5,048 tons, or 7 per cent., and $69,681, or nearly 10 per cent. Since its beginning, in 1895, this industry has almost steadily increased until, in 1917, its output and the value and average price per ton of its product were the highest yet attained. The output in 1917 was nearly 11 times greater than in 1895, and the value was nearly 19 times greater.

Fuller's earth is found in many States, but in 1917 it was mined and marketed in only six. Florida was the leading producer in 1917, having been credited with more than three-fourths of the total output and value. The other States, named in order of production, were Georgia, Texas, Massachusetts, Arkansas and California. The Southern States produced 98 per cent. of the domestic fuller's earth marketed in 1917. The imports of fuller's earth, 16,994 short tons, also increased in 1917, but they formed only 19 per cent of the consumption.

2,000 BARRELS SAVED.

North Cushing Well Cementing Returns $165 for Each $1 Spent.

Washington, Sept. 28, 1918.

Increased production of more than 2,000 barrels of oil a day from fifty wells in the North Cushing field of Oklahoma is the record achieved by conservation agents of the Petroleum Division, U. S. Bureau of Mines by cementing these wells to keep out the detrimental flow of water.

The progress of this campaign has previously been told in the Reporter, but the official statement of the tremendous saving of a much-needed war supply was made public for the first time to-day by the Petroleum Division.

Aside from the commendable saving of 2,000 barrels of oil each day for war uses, this lesson in practical conservation will add $4,500 a day to the operators' gross income, and if the increased oil yield continues for one year, a not over-sanguine expectation, there will be an addition of more than three-quarters of a million barrels of oil for war purposes, and $1,640,000 more in the pockets of the operators.

It is estimated by A. A. Hammer and V. L. Conaghan, the Federal oil and gas inspectors for Oklahoma, who have charge of this campaign, that the total cost of excluding the water from the fifty wells was $10,000, which means a return of about $165 for each dollar invested.

SIX MONTHS' (1918) QUICKSILVER OUTPUT LESS THAN FOR THE HALF YEAR OF 1917

The production of quicksilver in the United States during the first half of 1918 was 17,576 flasks, according to F. L. Ransome, of the Geological Survey. The total production in 1917 was 35,954 flasks, and as one-half of this is 17,977 flasks, the quantity thus far produced this year falls short by 401 flasks of that which should have been produced if the output this year is to equal to that of last.

The decline in production during the first half of 1918 was due chiefly to the shortage and the increased cost of labor and to the exhaustion or depletion of known ore bodies under the stimulus of high prices for the metal. The practice at some of the larger mines has been to devote nearly all energy to getting out ore and to postpone the underground exploration and development that are necessary to insure long-continued steady production. In the language of the miners, some of the mines have been "gutted," and considerable time will be needed to restore them to a condition of high productivity. On the other hand, the high price of quicksilver has not led as extensively as had been hoped to the reopening of old mines long idle, although there are some notable examples of this result, and, during the second half of the year, these reopened mines may make good the shortage. Quicksilver mining is full of uncertainties, and capitalists are slow to invest extensively in an undertaking whose future can be so little foreseen. There is opportunity here for patriotism to cast the deciding vote where the cold doctrine of chances might turn the investor to industries offering greater assurance of reward.

One of the notable achievements in the industry during the year has been the successful adaptation of the rotary cement kiln to quicksilver metallurgy. Eight of these furnaces are now or will soon be in operation in California, and they are expected to make an increase in production that may more than offset the falling off during the first half of the year.

MISCELLANEOUS

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World's Production of Crude Petroleum in 1917, and Since 1857, by Countries.

[Prepared by J. D. Northrop, United States Geological Survey.]

Country.	Production, 1917—Barrels of 42 gallons.	Metric tons.	Per cent. of total.	Total production, 1857-1917—Barrels of 42 gallons.	Metric tons.	Per cent. of total.
United States	*335,315,601	44,708,747	66.98	4,252,044,003	567,019,201	60.89
Russia	†69,000,000	9,418,509	13.78	1,832,583,017	242,336,152	26.24
Mexico	55,292,770	8,264,266	11.04	222,082,472	33,166,241	3.18
Dutch East Indies	‡12,928,935	1,778,495	2.58	175,103,267	23,028,200	2.51
India	†8,500,000	1,133,333	1.70	98,583,522	13,144,469	2.41
Galicia	5,965,447	§829,629	1.19	148,459,053	20,646,603	2.13
Japan and Formosa	2,898,654	386,487	.58	36,065,454	4,808,727	.52
Roumania	2,681,870	†373,000	.54	142,992,465	19,283,174	2.05
Peru	2,533,417	337,789	.51	21,878,285	2,917,104	.31
Trinidad	1,599,455	222,456	.32	5,418,885	753,670	.08
Argentina	1,144,737	168,340	.23	3,047,858	436,033	.04
Egypt	1,008,750	134,500	.20	2,768,686	369,158	.04
Germany	995,764	†140,000	.20	15,952,861	2,155,974	2.30
Canada	205,332	27,378	.04	24,112,529	3,215,004	3.50
Italy	50,334	†7,000 §	.11 §	947,289	133,919	.01
Other countries	‖530,000	70,667 §	§	927,000	125,600	.01
Totals	500,651,086	68,000,596	100.00	6,983,567,246	934,137,289	100.00

* Quantity marketed.
† Estimated.
‡ Includes British Borneo.
§ Estimated in part.
‖ Includes 19,167 barrels produced in Cuba.

PETROLEUM TRADE AND NEWS ITEMS.

The Middle States Oil Corporation reports net sales of crude oil amounting to $72,082 in the six months ended August 31, an increase of $34,784 over the preceding six months.

The Lone Star Gas Company, of Fort Worth, Texas, is to construct a pipeline from the Keys field, in Oklahoma, to Petrolia, Texas, and another line from the field to the Gainesville line.

Felo McAllister has been appointed receiver for the A. E. Turner naval stores plant at Panama City. The bankruptcy proceedings were involuntary and instituted by the Lewis Bear Company, the West Florida Naval Stores Company, and R. O. Hancock. The Turner plant at Panama City is valued at $120,000.

OIL STOCK SCHEMES.

Fuel Administration Opposes "Wildcat" Propositions, Particularly in Swapping Liberty Bonds.

Washington, Sept 28, 1918.

The Oil Division of the United States Fuel Administration has adopted a policy of frowning upon market activity in "wildcat" oil stocks, and is particularly antagonistic to propositions to swap such stocks for Liberty Bonds.

The officials of the Oil Division recognize that some, and in fact many, of the "wildcat" propositions are meritorious, and they appreciate that every proven field today was once a "wildcat" proposition, so they say it would not be fair to say that there should be no sale of wildcat stocks. They realize that not all such stocks are "fly-by-night" propositions against which the investing public should be warned and protected. This general policy was adopted in order that the ready money of the country may be conserved for essential war uses.

The Oil Division frowns down upon any scheme, whether meritorious or not, that suggests a plan of trading "wildcat" stocks for Liberty Bonds. The Federal officials say that it is for the interests of the government to have the supporters hold onto their bonds as investment securities. By doing this the people feel that they are copartners with the country in all its efforts. Another reason is that there can be nothing better than the Liberty Bonds, as in any case it would be exchanging a certainty for a stock of doubtful value.

Many wildcat propositions, they point out, are promoted with little or no prospects on which to base hopes for a profitable return. Because of the publicity given to the value of oil stocks it is easier, they explain, to get people to believe in the chance for a quick fortune than in most other "chancey" investments.

T. C. Moss is in charge of the new branch office of Anderson & Gustafson, dealers in petroleum, which was recently opened at Busch building, Dallas, Tex. Mr. Moss formerly represented the same company at St. Louis.

The annual meeting of the stockholders of the Intermountain Petroleum Company will be held at the general offices, in the Title Guarantee Building, St. Louis, Mo., on October 3, for the election of five directors and the transaction of other business.

The Rowana Petroleum Company will shortly have its new refinery at South Woodriver, Ill., in operation. The company has begun to run oil through its new pipe line from the Cushing field. Recent tests were most satisfactory, according to officials of the concern.

Lieutenant Preston Sultan, of St. Louis, formerly manager of the Cleveland branch of the Indiahoma Refining Company, now attached to a French pursuit aero squadron, was seriously wounded by a fragment from an anti-aircraft shell while flying at an altitude of 10,000 feet. He is now recovering at a French hospital.

The Clark Refining Syndicate, of Casper, Wyo., has purchased from Metcalf, Hicks and others, a 23-acre refinery site at Rantoul, Kan., and announce that they will immediately commence the erection of a 1,000-barrel refinery upon it. Twelve hundred acres of leases upon which are located three small gas wells are also included in the transaction. A pipeline will be built to the different pools around Rantoul, Garnett, Paola and the other fields and the refinery will operate upon this crude. Victor Clark, of Casper, Wyo., is president of the purchasing company. Others interested in the concern are W. H. Metcalf, banker of Ottawa, Kan., and R. F. Duffield.

M., O. & H. Conference in Chicago.

Managers from the various offices of the Marden, Orth & Hastings Corporation, and salesmen in the territory covered by these offices, held a very important meeting at the Hotel Sherman, Chicago, September 24. Matters of interest to the company were discussed, and plans for the future were considered.

Among those who were present were the following:—From the Chicago office, A. C. Trask, vice-president; H. O. Rinne, E. J. Reschke, G. D. Paine, E. G. Keiner, C. D. Hayes, J. W. Leathers, Jr., M. Breuer, D. Lewis, W. S. Loud, V. J. Ryan. From Cleveland H. W. Galley, district manager; L. H. Morgan, A. H. Sampson. From Cincinnati, W. G. Rogers, manager.

NEW GENERAL IMPORT LICENSE TERMS EXCLUDE SCORES OF REPORTER ITEMS

Washington, Sept. 28, 1918.

Scores of the more important commodities represented by the Reporter are specifically excluded from the terms of a new general import license, P. B. F. 27, which has just been announced by the War Trade Board, effective for shipments made on or after October 1 next. The exceptions include chemicals, cement, vegetable oils, flaxseed or linseed, glass, starch, tanning and dye materials, for which specific licenses must be obtained.

The general license covers importations into the United States from the United Kingdom, France and Italy, or their European or Mediterranean African possessions or protectorates, of all commodities, except those hereinafter enumerated, provided the specfic goods sought to be imported originated in said countries, or in said possessions or protectorates.

The following commodities are specifically excluded from the terms of this license:—

Aloxite and boro-carbone; animals, live; asbestos; asphalt; bamboo and willow and manufactures; beverages, non-alcoholic, except mineral water; borax; breadstuffs, including all food grains and fodders, sago and tapioca, and all flours; caffeine; casein; castor beans and castor oil; cement; chloride of lime; chrome, chrome ore and chemicals extracted therefrom; cobalt, cobalt ore and chemicals extracted therefrom; cocoa beans or cacao; coconut meat; corundum, emery and emery ore; cottonseed and products; cryolite; cyanide of soda; ferro-alloys; ferro-manganese and spiegeleisen; flaxseed or linseed; gelatine and manufactures thereof; graphite or plumbago, and graphite crucibles; gypsum; hair, animal, including bristles; hair, human; iridium; iron ore; lime; mahogany logs and lumber; malt liquors; manganese, manganese ore, and chemicals extracted therefrom; mica; molybdenum, molybdenum ore and chemicals extracted therefrom; monazite sand; nitrate of soda; oils, animal; oils, expressed vegetable; optical glass; osmiridium; osmium; palladium; paraffine; plants; platinum and manufactures of; pyrites; rhodium; rubber, crude, scrap and reclaimed; balata, gutta joolatong, gutta percha, gutta siak; manufactures of rubber, ruthenium; scheelite; seeds, including hemp seed; shellac, and all lacs; starch; stone and manufactures thereof, except Italian marble; tanning materials, and substances from which same can be extracted; tin in bars, blocks, pigs or grain or granulated, tin ore and tin concentrates or any chemical extracted therefrom; titanium, titanium ore and chemicals extracted therefrom; tungsten, tungsten ore, and chemicals extracted therefrom; vanadium, vanadium ore, and chemicals extracted therefrom; wolframite.

American consuls in the countries affected by this new general import license have been instructed to certify invoices for all shipments included within the terms of this general license without further official instructions or official notification of individual import license numbers. The consuls will, however, indorse on all such invoices covered by this general license, "PBF No. 27," in the same manner as is now done in the case of commodities covered by other general licenses.

The list of commodities above enumerated is a tentative one. A detailed list, classified according to the tariff paragraphs, is being prepared, and will be announced shortly.

This new general license purposes to include commodities whose importation from Europe has been entirely unrestricted and whose distribution in this country has not been controlled; also, with certain exceptions, those commodities whose importation has heretofore been allowed under the back-haul privilege from convenient European and Mediterranean African ports.

Commodities covered by this new general license will not, therefore, require an individual import license, and it will not be necessary for the War Trade Board to cable officially regarding such shipments.

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Drug Markets

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 3, 4, 5, 6, 8, and table of contents on page 2.

Saturday Noon, Sept. 28, 1918.

Developments during the past week have centered mainly in sharp uplifts in camphor and menthol, with a coincident decline in saccharin. The movements in each of the materials has been sharp and decisive and were engendered by both domestic and foreign market conditions. Camphor advances were the result of a sharp shortage in American refined material, with the consequent demand to be met by holdings of the Japanese products. The menthol uplifts were the logical result of American importers permitting a shortage in importation to this country to eventuate, while England purchased 86,000 pounds in excess of her January-May importations in 1917, and the saccharin decline was the backwash of the reimposed embargo on shipments to Great Britain. The situation as concerns each of these materials is treated editorially elsewhere in this week's Reporter, as well as in the regular market reports.

While the above constituted the week's major developments, crude drugs have been generally strong during the entire period. In this group the strength of buchu leaves, ergot and ipecac were prominent. The first mentioned material was featured in another material advance based on newly imported material. The market was approaching the state where nominal quotations alone were possible, but arrival of 12,750 pounds served to provide a limited amount of leaves for the trade. Much, however, went into consumption through the satisfaction of forward contracts and the market closed strong. Ipecac and ergot held the positions which they achieved during the previous week but all factors on the spot were in agreement as to the probability of immediate advance. Ipecac is in especial difficult position, owing to certain restrictions which the government has imposed on sailing craft, which, under war conditions in shipping, have been carrying the majority of South American shipments to this country. As to ergot, it is doubtful whether or not any relief from the strictured stocks will be possible so long as international conditions are such as to bring Russia and Spain under the ban of the War Trade Board.

Among the drug and pharmaceutical chemicals, the advance in codeine featured the market. Manufacturers advanced the price 50c. per pound on the basis of the higher costs of production. This action is especially noteworthy as the raw material at present is in the easiest position occupied for some time past. Other developments within the group were the stronger positions of soda benzoate and cocoa butter. Soda benzoaae shows signs of a renewal of activity after a long period of quietude. Benzoic acid is stronger and with it came the advance in Benzoate. Demand increased to some extent and the close of the week found the market in a much healthier state. Producers are not especially optimistic, however, and it seems unlikely that anything like former uplifts will eventuate.

The essential oil group has been less active than during the previous session, but the strength of French and Italian essences continued to a marked degree. Bergamot in some hands is held firmly at $8 per pound, and all sellers agree that the future will see prices at least sustained. Many speak freely of advances to come, claiming that the strength of primary markets is such as to preclude importation at lower prices. At the source of supply all French essences are generally quoted higher than spot values. The market for such materials is very firm. Lemon oil weakened to some extent with the outcropping of some weaker holders. The result was a number of transactions, some of which passed as low as $1 20 per pound. Fundamentally, the market has in no wise weakened and $1 40 per pound seemed to be the view of most sellers. Peppermint oil occupies a strong place on the spot, although control of the material rests in the primary market.

There is said to be actually little oil here but it has been pointed out that there is a considerable amount of oil tied up under contract for foreign shipment and, as the War Trade Board is not granting license to export, some of this may eventually be dumped on the spot. For the time being, it would seem that the primary market is in strong position, although some signs of weakness might be adduced from the fact that farmers in the country report the primary market factors as ceasing to buy and expressing the opinion that they will have to begin selling in the near future. The market closed firm throughout the group, there being practically no weakness in any oil within the list.

The following table of advances and declines will show the internal developments of the market, and, taken together with the more intimate reviews which succeed, will outline thoroughly the factors which are holding the various sections to at least steady, if not strong, positions.

Advances.

Black haw, 5c.
Fish berries, 10c.
Buchu leaves, 15c.
Laurel, ¼c.
Sage, ½c.
Thyme, ¼c.
Blood root, whole, 4c.
  stripped, 5c.
Orris, 4c.
Valerian, 10c.
Canary seed, 4c.
Cardamoms, ½c.
Fennell, ¾c.
Hemp, 2¼c.
Mustard,
  California, 1½c.
  Bombay, ¼c.
Sunflower, ½c.
Paprika, 5c.
Burgundy pitch, 1½c.
Cocoa butter, bulk, 4c.
Codeine, 50c.
Menthol, $1.
Soda, benzoate, 25c.
Camphor,
  American, 10c.
  Japanese, 50c.
Oil of bergamot, 25c.
  geranium, 50c.
  lavender, flowers, $1.
  peppermint, 25c.
  sweet birch, 25c.

Declines.

Bourbon vanilla, 2½c.
Saw palmetto
  berries, 2c.
Deer tongue leaves, 1c.
Aconite root, 5c.
Colombo root, whole, 2c.
Manaca, 3c.
Caraway seed,
  African, 2½c.
Dill, 1c.
Poppy, Russian, 2c.
Adepsianae, 1c.
Saccharin, $3.50.
Oil of lemon, 5c.
  wormwood, 25c.

OPIUM.

Sellers report a regular inquiry from cousuming sources of purchase. The market has hung steady at previously quoted levels, and there has been no material change in the general situation surrounding the gum. No importations by manufacturers were reported during the period, but supply on hand is said to be adequate for all immediate necessities. Prices at the close were as follows:—Gum in cases and jobbing lots, $21.50; powdered, $23.50; granulated, $24.50 per pound.

MORPHINE.

Considerable interest was manifested in the awards by the government of contracts covering 18,000 bottles of 8 mgm. hypodermic sulphate tablets, 250 to the bottle. The award price ranged from 88c. to 90c. per bottle, which seems to be a very favorable price under present production conditions. In the spot market, the material has ruled steady throughout the period, with no change in fundamental conditions or prices. The closing quotations were on the following basis:—Bulk, 25-ounce lots, alkaloid, $16; sulphate, $11.80; acetate, $12.80; diacetyl alkaloid, $17.45; diacetyl hydrochloride, $15.70; ehtyl hydrochloride, $18; hydrochloride, $12.86 per ounce.

QUININE.

The market has been thoroughly limp during the past week, and it has been stated that Java sulphate has fallen to so weak a state that it is possible to pick up lots at 90c. per ounce on the spot. The establishment of direct communication between the Dutch East Indies and this country under the more liberal understandings in vogue between the two governments is serving as a stabilizing element, which the spot market reflects thoroughly. During the week, the government let contracts for 15,000 ounces of sulphate crystals. Of the entire amount, 10,000 ounces were awarded at 97c. per ounce, and 5,000 at 98c. per ounce. There was also an award of 6,400,000 tablets of 200 mgm. to the tablet packed 1,000 to a bottle. The price was $6.69 per bottle. The prices on spot at the close of the week were as follows:—Second hands, American quinine, $1; Java, 91@92c.; American manufacturers, 90c. per ounce in 100-ounce lots.

ALCOHOL.

Prices and market condition remain in statu quo. Business has been devoted to the routine small parcel transactions, which feature the market at this time. Producers are pressed to their full capacity to produce sufficient material to meet in full all government requirements and in part the demands of their regular trade. As all sales are under direct control by allotment through the Federal body in charge of alcohol distribution, sellers have little to say about the movement of their goods. The market holds quiet and fairly steady at the following positions:—Grain, 188 proof, $4.91; 100 proof, $4.97; cologne spirits, 190 proof, $5.06; sugar cane, 188 proof, $4.90; 190 proof, $4.93; refined wood, 95 per cent., 91½@92c.; 97 per cent., 94½@95c.; denatured, 180 proof, 68@69c.; 188 proof, 69@70c. per gallon.

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special feature at the close of the week and trade throughout the period has been devoted to the quiet channels of government controlled flow. Crude is being offered steadily to the refiners, who are meeting their requirements easily. Nothing is likely to disturb the situation, and the extent of co-operation between all concerned is limited only by conditions beyond their control. Prices remain, of course, at the positions which the government agreed price on dynamite made certain, and were as follows:—C. P., 61@62c.; dynamite, 60c.; soaplye, 38@38½c.; soponification, 42@42½c. per pound.

Chicago, Sept. 26, 1918.

Nearby shipments continue to interest traders in the Chicago glycerine market this week, despite the fact that there appears to be little doing in that direction. Not quite so much interest was displayed with reference to October-March shipments as was the case last week. The sale price of prime soap lye, crude, remained around 36½@37½c., loose, f. o. b. shipping point, basis 80 per cent., with moderate trading reported. Crude, Twitchell basis, 88 per cent. continued to be quoted at the government prices of 46¼@46½c., loose, West, while for dynamite glycerin the government price of 58c. prevailed in the quotations, with no recent actual transaction having been reported.

The chemically pure glycerin market continued quiet, with the price remaining around 61c.

ACIDS.

Steady conditions were present in the market during the past week. Benzoic acid seemed a trifle firmer; carbolic was without change, and tartaric remained in low supply and firmly held.

BENZOIC.—The material seemed somewhat firmer on greater inquiry during the period and the closing price was given at $2.80@2.90 per pound, according to seller. The market closed without special incident at this figure.

CARBOLIC.—Producers stated that inquiry for the material is growing and that their production conditions are such as to point to eventual uplift in the material. The situation at the moment is denominated firm and steady with developing undercurrents. Prices at the end of the week were as follows:—Drums, 44@46c.; tins, 47½@48c.; bottles, 51@53c. per pound.

TARTARIC.—The material is in stringent situation as concerns supply, and producers are unable to approach the point where control of the market will again pass into their hands. Second hands wer reporting an excellent consuming inquiry for prompt material, and the market closed firm as follows:—Crystals, 86c.; powdered, 85c. per pound, which are the manufacturers' quotations.

BOTANICALS.

Continued strength in ergot featured the market throughout the week. Balm of Gilead buds are practically nominal on the spot. The list was steady and firm at the close of the period.

BALM OF GILEAD BUDS.—The material has reached a nominal position, and many sellers state that there are no supplies available on the spot or nearby.

ERGOT.—While one hears quotations on the basis of $1.75 per pound, but it is doubtful whether much could be picked up at this figure. The material is in very strong position, and all information as to the primary markets point toward a sustenance of this position. Quotations at the close ranged from $1.75 to $1.85 per pound.

GUARANA.—Little interest is being taken in the material at the close, the easier undertone being more pronounced if anything. Prices are quotably unchanged and were noted at 90@95c. per pound at the close of the market.

LYCOPODIUM.—Although the material so far as future supplies are concerned is doubtful the supply on the spot seems adequate to meet the routine requests of the moment, and the price at the close was quotably unchanged at $1.65@1.70 per pound.

BALSAMS.

The market was devoid of interest beyond the award of government contracts on balsam Peru. Undertones were unchanged, and until demand freshens considerably developments are unlikely to occur.

COPAIBA.—Buyers are well supplied at the present time, and there is no activity in the market whatsoever. Prices remain weak on South American material, which, in a large way, is obtainable at 75c. per pound, with the usual quotation being stated at 77½@80c. per pound. Para balsam was firm at the close at 60@65c. per pound.

PERU.—The government during the week awarded contracts covering 8,800 half-pound bottles. The award was split two ways, 7,300 bottles going at $2.08 per bottle and 1,500 bottles at $1.85 per bottle. This is roughly at the rate of $4.16 and $3.70 per pound. The market closed at $3.35@3.40 per pound.

TOLU.—Several sales went through during the week on the basis of $1 per pound, but this could hardly be called a market price for the material as the transactions were made under special conditions which made the lower price possible. The close was quiet and uneventful at $1.05@1.10 per pound, and demand at this figure was routine.

BARKS.

The strongest factor in the list at the close of the week is black haw bark of tree and root. The supply is very limited. Cottonroot, cascara, elm and orange peel hold firm, with upward tendencies.

ANGOSTURA.—Following the decline of the previous week, the material has remained unchanged as to price of inherent condition, and the close was steady at 33@35c. per pound. Inquiry is at a minimum, according to spot sellers.

BLACK HAW.—Reports from the primary country indicate that the material is not being gathered in quantity sufficient to assure a good supply for the coming season. As the material is meeting with a steady and constant demand, the situation grows in strength. The close was higher at the following positions:—Bark of tree, 35@40c.; root of tree, 45@50c. per pound.

CASCARA SAGRADA.—Demand is steady for the material, and although prices are virtually unchanged at the close of the market, the condition of supply is such as to warrant assumption that there will be no relaxation from present quotations. The price at the close was 19@20c. per pound and limited quantities available at these figures.

COTTONROOT. — Buyers reported sellers quoting at advanced figures during the week, and as consumers' ideas were rather below the indicated positions, business was somewhat less during the period. The primary market is reporting but limited amounts of the bark being gathered and sellers on spot hold that present prices do not adequately express the values warranted. The close was at 15@16c. per pound.

CRAMP.—Values hold steady on the spot, and for the moment price uplifts seem to have ceased. Stocks of genuine root are small and business passing at the present time is causing certain shrinkage in reserves. The primary market is not gathering in sufficient quantity, either the genuine or so-called material. The close was firm at 11@12c. per pound for the so-called bark and 50@53c. per pound for the genuine.

ELM.—The primary market reports that gathering is falling down sharply and that the supply for the year will be materially reduced from that of last year. On the spot, the situation is reflected in the firm undertone which prevails throughout the market. The close was at 20@21c. per pound for the bundles and 11@12cc. for grinding.

SASSAFRAS. — Demands increased for the material during the period, and in some quarters prices were noted at slightly higher positions. Selected material is in especial demand, and the coming crop is said not to be such as to warrant any bearish opinions. The closing prices were firm at 14@15c. per pound for the ordinary and 24@25c. per pound for the selected goods,

SOAP.—Consumption holds steady for cut and crushed grades, while the whole bark is firm under a somewhat lessened demand. Supplies of the first mentioned grades have shrunken sharply under the impact of constant demand and prices are being easily maintained. The closing figures were: Whole, 12@13c.; cut, 19@20c.; crushed, 17@18c. per pound.

WAHOO.—During the week advices received from the gathering country indicated that previous statements have been too mild, if anything. There is little being carried over from the former seasons' crops, and as production is sure to be lower for the coming year, a firmer view is being taken of the material, both on the spot and at the source of supply. The close was at 42@44c. per pound for the bark of root and 24@25c. per pound for the bark of tree.

BEANS.

Vanilla holds firm on the spot, but prices show practically no change, despite the continuance of good inquiry. The balance of the group reflects this situation, and the market closed in firm posiiton.

TONKA.—The primary market has been offering larger and freer shipments of late, and the situation is said to be easing up from this point of view. Stocks on spot are in good situation, however, and sellers are not showing any particular interest in these reports. Buyers seem fairly well supplied with beans, and are trading in a routine way at the moment. Export is not possible else the outgo toward foreign markets would produce a more lively situation at home. The close was at $1@1.05 per pound for the Angostura material.

VANILLA.—Despite the fact that inquiry is said to be holding steady for all types of the bean, prices have solidified to a considerable degree on the spot. Trading centers in Bourbon and South American goods with an excellent call reported for Tahiti material. Bourbon beans have not been arriving in quantity of late. The colonies seem to have ceased shipment, but it is understood that the French sellers are well supplied with goods which they are offering at 20 to 24 francs per kilo.

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Prime beans are commanding outside prices. The speculative element is well developed in the French markets as the situation as concerns Mexican and Tahiti beans in this country is playing directly into the hands of the French operatives. Mexicans are in narrow supply and prime beans are worth in the neighborhood of $6 per pound, with only limited quantities available in first hands. No relief from the situation as concerns importation is in prospect. Tahiti beans are also barred. Importers on the spot indicated that they had plenty material of all labels in the islands, but are unable to secure permission to bring it forward. The situation continues firm, but sold as to price developments. The closing quotations were on the following basis:—Mexican, whole, $4.50@6; cuts, $3@3.25; Bourbon, $2.12½@3; South American, $3@4; Tahiti, white label, $1.65@1.70; green label, $1.55@1.60; yellow label, $1.60¾1.65.

BERRIES.

Saw Palmetto berries are easier on lack of demand. Cubebs hold firm at recent advances. Fish are quoted at sharply advanced positions. The balance of the group was firm at the close.

CUBEB.—The material has held firm at the recent advances on all grades. The supply at present is in fair shape and with inquiry rather routine, sellers expect little change for some time to come. The closing quotations were:—Ordinary, $1.25@1.30; XX, $1.30@1.35; powdered, $1.30@1.35 per pound.

FISH.—Cocculus indicus berries are quoted as high as 60c. per pound on the spot, and all cheaper lots seem to have been absorbed. Demands are in excess of sellers' supply at easier positions, and very little material is being mentioned nearby or in the future. The close was at 50@60c. per pound.

JUNIPER.—Firm offers brought out trade at figures shading the closing levels of 8@9c. per pound. While demand is not large, the cost of importation is such as to make a lower price unattractive to sellers.

SAW PALMETTO.—It is possible to do 16@17c. per pound on the spot at the close of the week. Inquiry is said to be virtually stagnant at the moment, and considerable competition is met on all inquiries. The close was uninteresting at the above positions.

FLOWERS.

Prices hold steady throughout the group and there have been no changes reported during the past week. Calendula flowers are in splendid supply, but inquiry is dormant. Hungarian style chamomile is in easier position, but supplies are not heavy. Insect flowers are firmly held in all hands.

CALENDULA. — Pharmaceutical manufacturers who stand in need of petals properly prepared, and showing a high test of the essential principal can buy to advantage at the present time. Sellers on the spot deem the situation stagnant and as many are holding material bought at prices warranting high quotations, there is little to stimulate the market as concerns most sellers ideas. One hears quotations down as low as $1 per pound, but fiery flowers are priced as high as $3.20 per pound. On the latter, it is possible to do as well as $2.50 per pound on quantities without limit.

CHAMOMILE—No change is reported in the chamomile groups during the past week. Following the decline of last week, Hungarian style material has remained unchanged in its easier position. The close was quiet, at the following levels:—Roman, 90@95c.; Hungarian style, 47@50c. per pound.

CLOVER TOPS.—The country has supplied good stocks of clover tops and the material is one of the few botanicals which is in excellent stock. Prices are resting easy on the basis of 18@20c. per pound and firm offers to purchase would undoubtedly be treated to shaded quotations.

MALVA.—Blue material is offered in limited way at $2.50@2.60 per pound, and some buyers declare that $2.45 per pound can be done on the flower. Black flowers are quoted at 40@50c. per pound.

SAFFRON.—Demand has subsided to routine requests of a jobbing character and sellers seem more willing to move goods at shaded quotations. Storage charges are heavy and necessity has freed some sellers to accept lower offers in order that their stocks may not show a loss. However, the situation holds firm and there is little likelihood of a material decline from ruling quotations, as future supplies are decidedly in the problematical class. The close was at $15.50 per pound for the Valencia flowers, and 39@40c. per pound for the American goods.

HERBS AND LEAVES.

Buchu leaves are again advanced on the spot, and the indications all point toward higher prices to come. Deer tongue continues to be quoted down slightly, but laurel, sage and thyme, all advanced at the close.

BUCHU.—Sellers reported further advances on shrinkage of supplies. With South Africa offering but limited amounts for shipment, the situation is critical. Importations during the previous week amounted to 12,750 pounds of the badly needed material, and this is being held at $2.40@2.50 per pound, according to seller.

CANNABIS.—Domestic cannabis is available as low as 35c. per pound at the moment, which is sharply lower than the inside at the close of the previous period. The low price of high test domestic material has circumscribed the demand for foreign material, which is quoted nominally at $3.50@3.60 per pound.

DEER TONGUE.—While supplies in the country are not reported as materially increased, the situation on the spot continues to show easier signs and in one direction on the spot offers are made on the basis of 17c. per pound for the goods. The price ranges as high as 22c. per pound in some sellers' hands.

DIGITALIS. — Demands have been reported good for the domestic material, which at the close of the week was reported firm at 37@40c. The foreign goods stand at 45@46c. per pound. Little inherent change is reported in the underlying conditions of the market and the close was quiet but firm at the above figures.

HENBANE.—The material is without life on the spot, and is quoted at $1.25 per pound for foreign, and $2 per pound for domestic goods. Buyers have withdrawn from the market to a marked extent and the trade centers in jobbing amounts.

LAUREL.—Laurel leaves are fractionally up at the close, the Indies price being $12¾@13¼ per pound, according to quantity and seller. There has been little change in the fundamentals of the material and many buyers stated that the slight uplift was of the artificial stimulus type.

SAGE.—Greek good stemless sage has met with increasing inquiry throughout the week, and an advance of ½c. per pound was noted by the end of the period. It is the opinion of many factors that this will be of temporary duration. Fair grinding sage also reflected the higher positions mentioned and closed ½c. per pound above the previous quotation. Spanish sage is in the same situation as prevails in all Spanish goods, and is firmly held at 19½@20c. per pound on the spot. Greek good stemless closed at 27½@28c., and fair grinding at 27@27½c. per pound.

SAVORY.—Offers at 24c. per pound were mentioned on the spot during the week, but most sellers are quoting at 25@26c. per pound at the close of the market. Routine and jobbing requests featured the week's demand, and the close was quiet at the figures mentioned.

THYME—Except on exceptionally large transactions, the price at the close was higher by ¼c. per pound on both Spanish and French material. Shipments to the spot are irregular and there is said to be very little in nearby positions. The closing figures were firm at:—Spanish, 11¼@11¾c.; French, 14¼@14¾c. per pound.

UVA URSI.—Recent heavy arrivals were closed out at 15c. per pound, and it looks as though there is little disposition to hold goods which show a reasonable profit. The inside at the close was 17c. per pound, and this was quoted on earlier importations, which were purchased at better prices than were the recent arrivals.

ROOTS.

Ipecac, orris, blood and valerian are in strong position on the spot, and prices are generally higher on all the materials mentioned. The list was generally well sustained in price, and the close was firm.

ACONITE.—Some tendency to shade the closing prices of 40@45c. per pound, although it is doubtful whether or not very much could be picked up at less than the figures mentioned. The supply on spot is in good shape at the present time, and there is every indication that the material will be one of the few botanicals which are marketed in quantity for the coming season.

ALKANET.—There are practically no stocks of the root, and such as might be picked up in a small way are to be had on the basis of not less than 75@3 per pound. It is reported that the market is filled with spurious goods—roots of indifferent material, which have been coated with an alkanet solution to give a color resemblance to the genuine article. Many users have turned to cudbear, which is to be had in quantity at 30@40c. per pound. It is said to be a satisfactory substitute.

BETH.—There are 4,000 pounds of the material available on spot at 8c. per pound, and it is going begging at this price. It seems strange that many if not most sellers are quoting at 14@15c. per pound. It is said to cost 8c. per pound in the country, and the above parcel ought to prove of interest to the restricted inquirers for the material.

BLOOD.—The inside price on this material at the close of the market is 45@46c. per pound for whole root and 48@50c. per pound for the stripped variety. The country has comparatively little to offer, and the strong basis on

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Althea Root, White Whole
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Berberis Aquifolium Root
Beth Root
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Colchicum Root, sliced
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the spot is founded on this, as well as the good demand for the root.

COLOMBO.—Whole colombo root is now offered on the basis of 28@30c. per pound. Demand has become a trifle dull, and there has been but routine inquiry of a jobbing character during the period. The close was firm, however, as the supply on spot, especially of powdered, is limited.

IPECAC.—While no further movements upward have been reported in ipecac root, the situation continues to hold strong on the basis of a limited amount of material being available on the spot and the absence of nearby root. Demand holds steady for the material, and the close was sustained at $4.25 per pound for the whole and $4.50 per pound for the powdered Rio and Cartegena roots.

MANACA.—Demand is very light for the root and the price at the close of the market shows a decline of 3c. per pound. With buyers showing no interest, the close was quiet at 27@28c. per pound.

ORRIS.—The importation price of the material stands close to 30c. per pound for whole Florentine material, while the powdered goods is quoted at 29c. per pound. On the spot, there is nothing available at less than 28@29c. per pound for whole and 29@30c. per pound for the powdered root. Verona root is in very light supply, and the price is being maintained at 25@26c. per pound for the whole root, $2 per pound for fingers, and 26@27c. per pound for powdered material.

PINK.—While some sellers state that there have been sales at 42½c. per pound during the period, the general market views hold for 45@46c. per pound at the close of the period. Genuine root is hard to find, and as the country is gathering but limited quantities, the future looks bullish.

VALERIAN.—Japanese and Belgian Valerian root is in strong position at the close of the market. The Japanese material is following the route of all Japanese products under wartime conditions, and the primary market advances the price steadily as competition with other markets is wiped out. Consumption is being curtailed somewhat by the higher prices, but as the root is indispensable for some purposes, the inquiry from such sources holds steady. The close was at the following positions:—Belgian, $1.35@1.40 per pound, nominal; Japanese, $1.45@1.50 per pound.

SEEDS.

The feature of the week has been the sharp uplift in canary seed, which is now the embargo list. Caraway and celery are easier, while hemp from Manchuria shows new strength. The market closed somewhat firmer.

CANARY.—With the material prohibited of import, canary seed continued to rise in price throughout the week and at the close the ruling quotation was 25@26c. per pound, being applied to both Spanish and South American material. The future seems very bullish, according to sellers on the spot, and buyers have been advised to provide against coming needs. The attitude of the government at the present time is that there are satisfactory substitutes available in this country and that a worthwhile saving in tonnage will be effected by the exclusion pronounciament.

CARAWAY.—African caraway has been reduced on the spot, owing to considerable competition which developed early in the period. The closing price was 62½@63c. per pound. The easier undertone was expected to further activate the market and bring out lower figures in the future.

CARDAMONS. — Scarcity of supplies as concerns decorticated material brought out a fractional advance during the week. Inquiry has been good for sometime past and weaker held lots seem to have been absorbed. The close was at 57@59c. per pound. Bleached goods showed no change, being quoted on the basis of 85c.@$1.50 per pound while the green seed was noted at 45@48c. per pound.

CORIANDER.—The material seems to have hardened somewhat at last week's closing prices. There is a super-abundance of the seed available on the spot, and the shipment prices cabled of late show the same low priced tendency in the primary market. The final figures are quotably unchanged from those of the previous week and were as follows:—Natural, 10½@11c.; bleached, 13@13½c. per pound.

CUMMIN.—In some hands the material shows higher quotations. The advance is fractional and hardly warranted under present conditions of supply and demand, as reported by most sellers on the spot. The closing quotation was 11½@12c. per pound.

DILL.—Owing to a subsidence of the more active demand for this material, sellers on the spot were offering in quantity at a decline of 1c. per pound from the closing figures of the previous week. The market stood at 21½@22c. per pound at the close.

FENNEL.—French fennel showed greater lift during the period and an increased inquiry brought the price at the close to 17@17½c. per pound. Most sellers viewed this as a temporay state and expect a return to at least 16c. per pound in the near future.

HEMP.—This material followed the uplift in canary seed and closed higher at 9@10c. per pound. The market was strong throughout the week and the close showed evidence of further movements upward.

POPPY.—Russian seed continues to fall in price with the absence of a sharp consuming demand and rather liberal supplies of the moment are also contributive elements. India seed shows no change and closed at 40@41c. The price on Russia seed was placed at 76@78c. per pound.

SUNFLOWER. — Reaction upward was noted in this material, a movement due in part to a resumption of inquiry, higher costs of import, and shrinkage of existing supplies. The close was at 7½@8c. per pound, and the seed was firm at this position.

SPICES.

So far as price changes are concerned, the week has shown little, if any, activity. For the moment, there seems to have been a hardening of prices, which has not been disturbed to any general extent throughout the period just closed. The market has held reasonably firm, except as concerns peppers of all varieties, which importers indicate as being somewhat easier at the close.

CASSIA.—With the primary markets quoting generally in advance of spot and nearby goods, little business for import is reported by factors in this market. Trade has been along jobbing lines, and hand-to-mouth buying seems to have been more than ever a feature of inquiries during the past week. With the exception of the more plentiful supplies of broken selected and Saigon goods, the materials are generally in scant supply, and hence the market holds firm. Closing quotations were:—Batavia No. 1, 28@29c.; No. 1 Saigon rolls, 52@53c.; China selected in cases, 24@25c.; broken selected, 15¾@16¼c.

CLOVES.—Sellers indicate a steady consumption of recent arrivals, and, as it is becoming increasingly difficult to secure shipments from the primary market, the future situation is more than in jeopardy of a sharply lowered importation. Prices at the close remained undisturbed, and were quoted as follows:—Amboyna, 61@62c.; Zanzibar, 47@47¼c.; Penang, 70@80c. per pound.

MACE.—The undertone continues to show growing strength, and, although there has been no further advance in spot prices on the various varieties of the material, the market is in firm position at the close, with demand active and a good volume of business completed at the closing prices, as follows:—Banda, 56@57c.; Penang, No. 1, 55@56c.; No. 2, 51@52c.; Batavia, No. 2, 47@48c. per pound.

NUTMEGS.—Stocks are said to have shrunken to the extent that the supply available for prompt delivery is restricted to a very limited number of packages. Demand is fair and should there come into the market buyers intent to cover their necessities of the future prices would be more or less certain to jump. The close was quite firm, as follows:—75's to 80's, 42@43c.; 105's to 110's, 38@39c.; grinding, 37@38c. per pound.

PAPRIKA.—The amount of material is negligible on spot, and the close of the market finds the price sharply in advance of that of the former period. Practically nothing is being permitted entry at the present time, and business is being transacted largely on present reserves with future business limited to a marked degree. International conditions mitigate against any betterment of the situation. The close was as follows:—Spanish, 50@52c.; Hungarian type, 51@53c. per pound.

PEPPER.—The undertone of the market has assumed further weakness during the week. Arrivals last week totaled 1,737,750 pounds. This week, 668,550 pounds were entered. Although much may be re-exported to South American countries, there will be considerable available for spot transactions. The market has felt the impact of these additional supplies. In fact, the weakness of the market has been pronounced for this reason as much as any other. Importations to the end of June—the last month in the fiscal year—show an increase of 14,583,678 pounds for the 12-month fiscal period. Absorption on re-export account has been unable to take care of the surplus over the actual domestic needs, and hence the market at the present time is in a state of marked weakness. Closing prices were quiet at last week's levels, which were as follows:—Black Singapore, 25@26c.; Aleppy, 27½@28c.; Lampong, 25@26c.; Tellicherry, 27½@28c.; White Singapore, 32@32½c.; Red Japan chillies, No. 1, 16¼@16½c.; Mombassa, 24@25c.; Capsicums, Bombay, 13½@14cc.; Japan, 12½@13c. per pound.

DRUGS AND PHARMACEUTICAL CHEMICALS.

Menthol has featured the market throughout the week and the advance on spot has brought the market to a parity with the primary source. Cocoa butter showed greater life, but saccharin dropped sharply early in the week and has shown no recovery.

ACETANILID.—Technical material is offered as low as 63c. per pound, but the U. S. P. is somewhat steadier at 73c. per pound in second-hands and with manufacturers showing evidence of meeting present conditions by a sharp reduction.

ACETPHENETIDIN.—D e m a n d seems to have improved for the price in second hands, has hardened at $2.90 per pound and there is practically no attempt to reduce the position under competition. The close was quiet at $2.90@3 per pound.

ADEPSLANAE.—A slight concession of price was noted on the spot, and although it is hardly indicative of anything but competitive selling, the movement might spread under a somewhat freer release of material than has heretofore been possible with the government taking large quantities for overseas consumption. The close was at 39@40c. per pound for hydrous and 49@50c. per pound for anhydrous.

BURGUNDY PITCH.—Shrinkage in supply has been evidenced by an advance in price on the spot to the closing level of 7@8c. per pound. On firm offers to buy this might be shaded to 6½c. per pound, according to sellers on the spot.

CASTOR OIL.—South American exporters are said to be offering the material for shipment, but at prices which preclude meeting the present second hand price of 36½@37c. per pound. There is no change from the status quo. Crushers are delivering in driblets to their old customers, and at the best are only making the strongest efforts to have a business left for after-the-war trade.

COCOA BUTTER.—Demand has not freshed to any considerable extent, but the material on spot shows some signs of renewed life as the production falls off under the sugar restrictions. The close for prompt material was at 32@33c. per pound, with nearby goods quoted at 30@31c. per pound.

CODEINE.—The prices on various forms of codeine were advanced at the close of the previous period and too late to be noted in these columns. The movement was the result of higher costs of production. At present prices manufacturers are offering no contracts. The new scale was based on the following scale:—Alkaloid, $10.15; sulphate, $8.10; muriate, $9.10; nitrate, $9.10; phosphate, $7.60 per pound. This is in 100-pound lots. Ten-ounce lots show an advance of 15c. per pound above these rates, and for less than 10 ounces, 30c. advance.

MENTHOL.—The week has seen the greatest activity in menthol that the market has experienced for some time past. The price moved close to $6 per pound before the end of the week, although it was reported that small lots might be picked up at $5.50 per pound with diligent search and an immense amount of good luck. The present cabled price of the material in Japan is $5.80 per pound, laid down in New York, and all indications point toward co-ordinate movements in Japan, as the market in this country advances. It is claimed that the supply on spot is considerably less than has hitherto been estimated during the period when menthol was more or less a drug on the market. Japan has known of the slack state which featured the foreign markets for some time past, but has quoted consistantly at prices in advance of the spot.

Of course, the basis of the movement is placed in the primary market which has reported bearishly on crop expectations for a long time. The normal yield is reduced sharply in these Japanese estimates, and it seems likely that there is more than a basis of propaganda to support the claim. At the same time, it is felt here that menthol is a minor edition of camphor. The government holds full control of the trade and directs reports with certain hands. So far as figures are possible the normal yield has been in the neighborhood of 673,000 pounds—the figures for 1913. According to Japanese figures for the first five months of the current year, totaled 168,393 pounds, as against 162,658 pounds in the equivalent period of 1917. Of these amounts the United States received 45,805 pound in 1918 and 125,722 pounds in 1917. This represents a loss of 79,917 pounds in this year's shipment. The entire loss has moved to Great Britain and British India, which, together, received during the 5-month period a total of 114,078 pounds in 1918, as against 27,105 pounds in the 1917 period. The following table shows the situation.

		Pounds		
Year.	Country.	Imported.	Loss.	Gain.
1918	United States..	45,805	....	....
1917	United States..	125,722	79,917	....
1918	Gt. B. and India	114,078	....	....
1917	Gt. B. and India	27,105	....	86,973

From Japanese figures it is clear that there has been a greater exportation this year as compared with last—4,345 pounds, as a matter of fact. So far as this market is concerned, the governing fact is not so much a short crop in Japan as the movement of an additional 86,973 pounds to Great Britain and India, while the United States has sustained a curtailment of 79,917 pounds, both amounts being based on the exports from Japan from January to May, inclusive. The other countries to which Japan exported during this period show a sharp decline in receipts. The answer to this huge increase to England and India is hard to find. The price of menthol in England on January 1 was $3.25 per pound, and on May 1 $3.41 per pound. In this country the price range between the same dates was $3.15 to $3.30 per pound—10 cents per pound difference throughout the five months. England, apparently, would buy at Japanese rates—hauled in Japanese freighters, with the consequent high rates for carriage which England is known to be willing to pay—while the American importer has stayed out of the market to a distressing degree. Underproduction does not tell the entire story by any means.

Prices on the spot advanced roughly from $4.70 per pound—according to some sellers, although many insisted on $5.25 per pound early in the period—to the closing price of $5.50@6 per pound, the outside being the prevailing quotation. The closing quotation in England early in the week was $4.75 per pound. Probably the American importers may turn to the English market for goods.

QUICKSILVER. — Selling agents quote the material variously from $1.25 to $1.30 per 75-pound flask, and there seems to be little stability to the market, so far as the actual price at which business may be done. All agree that the amount of the metal available on the spot is problematical and certainly not large.

SACCHARIN.—With export shut off, the material on the spot has disintegrated sharply during the past week, and at the close of the market it was possible to do $23 per pound on both soluble and insoluble material. Little interest is being taken, except in the future positions under contract. Preparation for the next English saccharin drive is in vogue and depression of the market is a certain sign that it is well under way.

SODA BENZOATE.—With a revival of interest in the basis material has come a coincident movement in this material, which at the close of the market was quoted on the basis of $3 per pound as an inside price. Demand is said to be better and a slight improvement in this very sick patient seems imminent.

GUMS.

The feature development of the week was the heavy demands for camphor. The market skyrocketed on Japanese refined material and closed strong, with an advance by the American refiners.

ARABIC.—The material is in low estimate on the spot and sellers report nothing but routine demands at the close of the market. Cleaned amber sorts can be bought at 28½c. per pound prompt or 27c. per pound nearby. The close was quiet at the following positions:—Firsts, 50@52c.; cleaned amber sorts, 28½@29c.; white, 45@50c. per pound.

CAMPHOR.—Japanese refined camphor on spot soared throughout the week, and at the close was quoted at $1.75 per pound for both slabs and tablets, either ounce or two-thirds ounce. The movement eventuated with a heavy consuming demand which seems to have come from two points—New England and Canada. This was selling directly into the territory usually supplied by the American refiners, who are, apparently, unable to meet the pressure, with the result that the spot market was swamped with firm offers up to $1.75 per pound. All told, there are probably not more than 300 or 350 cases of slabs and tablets on the spot at the present time, and much of this will be realized on under the present era of swift advance. As much was bought as low as $1.05—better than this for some of the holdings—present prices tempt sellers to take profits.

The position of the American refiner is becoming strangulated. Reports indicate that he is purchasing refined material both here and in Japan—imports from the latter place to the extent of 45,000 pounds of refined, as against 10,000 pounds of crude, were reported during the week. The proportion is provocative of thought. Recent cabled advice placed the price of refined at $1.40 per pound laid down in New York.

The answer to the heavy inquiry from New England might bear some relation to the Spanish influenza epidemic ranging in and around Boston. Attempts to secure a statement from the health authorities on this point failed up to the time of going to press.

The close of the market was strong, and every indication was present of a continuance of the situation.

ESSENTIAL OILS.

Arrivals of wormseed oil of new distillation has provided a quotation of this material which has been in nominal position. Peppermint and spear-

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Licorice Root
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mint have held strong, as also have bergamot, cananga, lavender flowers, and wintergreen. Lemon seems to be somewhat easier for small lots. The close was firm throughout the list.

BERGAMOT.—With some sellers quoting not less than $8 per pound for high grade oil, the material at the close of the week was in additional strength. The inside seemed to be $7.50 per pound with a bare possibility of a few weakly held lots being available at $7.25 per pound. The strength of the material in both primary and spot markets is such that most sellers agree that there will be little relaxation of prices in the future.

CANANGA.—Native cananga is being held in some hands at $6.50 per pound. This is not a general quotation, the inside at the close being on the basis of $6@6.25 per pound. Rectified oil is in firm position, and is reported at $6.50@6.75 per pound.

CLOVES.—Stocks are said to be not plentiful, but demand is quiescent at the present time, and there is said to be nothing but routine activity reported. The close was quiet, but firm at $3.20@3.30 per pound for the oil in cans and $3.30@3.35 in bottles.

GERANIUM.—All sellers are devoting their very limited supply to the satisfaction of small demands from their established clientele. Prices are stiffer at the close and are practically nominal on the following basis:—Turkish, $4.85@4.90; Algerian, $10.50@10.75; Bourbon, $9.50@$10 per pound.

LAVENDER.—High grade oil of lavender flowers is held firmly at $6@6.25 per pound, and sellers report that conditions warrant the opinion that higher prices are bound to come in the material with any considerable increase in inquiry. French spike is reported also strong at $1.75 per pound for an inside figure. Spanish spike is unchanged at $1.25@1.30 per pound.

LEMON.—Some sellers state that it is possible to pick up small lots of the oil at $1.20 per pound, although the market generally stands at $1.35@1.50 per pound despite the fact that there is bound to be a sharply lessened amount available for shipment from Italy. Consumption is not increasing, and it is only the domestic consumption in the foreign market which has eventuated the present high position.

NEROLI.—Neroli petale and bigarde are being quoted on the spot as high as $110 and $100 per pound, although one seller claims to be moving supplies on the basis of $90 and $80 per pound, respectively. As high as $135 per pound has been claimed for petale during the past week. The market is in strong position owing to the fact that primary market conditons predicate high costs of importation.

ORANGE.—Nothing has been noted in this oil during the past week. The advances of late seem to have compensated for the movements of the material in the foreign markets, and while there is no likelihood of a relaxaton from present levels it does seem certain that they will be maintained thoroughly until a weaker condition develops abroad. The closng prices were:—Italian, $3@3.25; West Indian, $1.75@1.80; bitter, $1.75@1.80 per pound.

PEPPERMINT.—A factor which may play the ultimate part in peppermint developments is the fact that there are considerable quantities of oil now under contract for export which the War Trade Board will not admit to license. Just how great this may be is problematical, but it is certain to be much larger than is popularly supposed. If this material can be kept out of the market in this country, the position of the material may be maintained for a period limited only by the consumptive demands of the manufacturers and staying powers of the present holders, who, according to advices published last week, have ceased to buy and feel that they may be forced to liquidate to some extent in the near future. The material on spot remains unchanged from the quotations of last week except as concerns one brand in bottles, which is commanding higher inside prices. It seems hardly possible for any immediate betterment of the spot situation, but with the present state of more or less hand-to-mouth buying likely to feature the requirements of buyers in this market, it would seem that eventually the market will relax to a basis commensurate with the lowered production and consumption. Qui Capit, Facit! Oil in tins closed at $5.25@5.50 per pound.

PETIT GRAIN.—South American petit grain is stronger on the spot, owing to the fact that the replacement supplies are coming North irregularly, and if confined to sailing vessels little if any will be allowed transportation in the future. The closing quotations were firmer on the following basis:—French, $7.50@8.25; South American, $3.75@3.80 per pound.

ROSE.—Natural oil of rose is available in small quantities only, and sellers are limiting their sales to conservation amounts moving to preferred customers. The close was nominally at $28 per pound for the natural, and $2.50@3 per pound for the synthetic.

SPEARMINT.—The general situation affecting spearmint remains unchanged at the close of the week, and the undertone of the peppermint market are paralleled exactly. The closing figures were $5.50@5.75 per pound.

WINTERGREEN.—The inside price on oil of sweet birch seemed to be $3.75 @4 per pound at the close of the market, although it is possible that shadings of these quotations are to be found. Leaf gaultheria now is quoted on the basis of $5.25@5.50 per pound, and supplies at this price are going to be considerably lessened in view of the labor conditions in the country.

WORMSEED.—Arrivals of newly distilled oil are now available on the basis of $10@11 per pound, according to seller. Generally, factors in this market regard the present shipment prices as too high and not warranted with the result that they are declining to buy at producers' figures. When greater quantities come forward, some fall from the above figures is expected. Inquiry is such as to discourage high prices at the present time.

WORMWOOD.—It is possible at the close of the week to buy this material on the basis of $5.25@5.50 per pound, and some sellers rumor sales at even more favorable positions for the buyer. Stocks are being held easily on the spot, and the close was quiet.

SHELLAC.

While Washington has not as yet forwarded the approval of recently agreed plans for the allocation of the material, telephone advices late Saturday stated that during the next week announcement of the conditions might be expected.

It is understood here that the approved plans are virtually those now in practice, with some minor addenda and changes. The tendency is toward slightly more liberal treatment of the trade, but the general result is a marked curtailment through strict allocation of material to essential industries and restricted sales to those outside of war work.

The government intends at the present time to so economize usage that the material imported during the period which ends March 31, 1919, will be enough to carry the trade throughout the rest of the year. Whether or not this will be possible is problematical, though it seems to be the idea on spot that a careful handling of present stocks and the importations to come will bring the trade through the period.

Prices on the spot have held firm at last week's levels and were noted on the following basis:—D. C., 86@87c.; V. S. O., 86@97c.; fine orange, 75@80c.; second orange, 72@73c.; T. N., 68@69c.; garnet, 68@69c.; button, 80@82c.; bleached, wet, 69@70c.; bone dry, 79@80c.

WAXES.

The market has held steadily to established levels throughout the week and closed firm. Trade has been along routine lines, which have not disturbed the steady positions of Japan, beeswax and carnauba waxes.

BAYBERRY.—Limited demand at the moment is reported for the material, but the price holds steady on the spot, in view of the comparatively small stocks available. The closing price was 36@37c. per pound.

BEESWAX.—All grades are in firm position, but inquiry has been along routine lines throughout the week. Sellers report buyers' stocks against future needs to be of fair volume, and do not expect any especial activity for some time to come. The closing prices were on the following basis:—White, pure, 63@65c.; light, 44@45c.; dark, 42½@43c.; refined, light, 47@48c.; dark, 46@47c. per pound.

CANDELILLA.—Inquiry is slack for heavy consumption and the more plentiful supplies of carnauba have served to quiet the market to a considerable degree. Jobbing orders from routine sources feature the business at the moment and the closing price of 44@45c. per pound was barely firm at the close of the trading period.

CARNAUBA.—Prices are quotably unchanged at the close of the week. Consumers of material are buying according to their actual needs. Indeed, there is little excess material available on the spot as all large arrivals have been subject to severe draft to complete forward contracts. The market at the close was relatively quiet with prices noted as follows: Flor, 94@95c. per pound; No. 1, 94@95c.; No. 2, regular, 85@86c.; No. 2 North Country, 84@85c.; No. 3 chalky, 66@67c.; No. 3 North Country, 76@77c. per pound.

JAPAN.—Sales as high as 27c. per pound were reported during the week and the material closed firm at 26½@27c. per pound. Cheaper lots seem to have been all absorbed and the market is in healthy condition at the close of the week. The primary market fails to show intention of quoting below the present high price. Shipment goods are in firm position and on spot but little concession is being made from the prompt material. Importations during the week amounted to 33,000 pounds.

(For Japan Drug Market and other late day news see page 71.)

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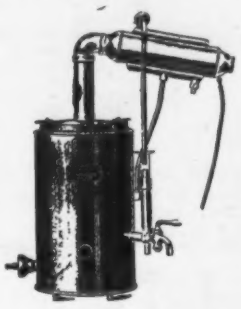

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Saturday Noon, Sept. 28, 1918.

Few price changes are to be noted for the week in the general market for coal tar dyes and intermediates at New York and the market throughout shows a consistently steady to firm undertone. The demand from consumers has been satisfactory and continues so, giving the trading a good foundation, when it is considered that stocks of most of the intermediates are small at best, owing to the limited production of some and the enormous consumption of others, both by domestic and foreign interests.

So much for the position of the intermediates. With regard to the trading in aniline dyes, it can be stated that the demand is unabatedly large, with considerable business still being offered, and producers in some instances being unable to keep abreast of current requirements for certain color lines. One of the items in heaviest call during the week was malachite green crystals and this continues up to this time. Prices for that dye are firm all around and in some quarters slightly higher. Foreign buyers are showing a considerable interest in various bright and acid colors, and these, accordingly, have developed a firm undertone.

Most of the week's trading interest in the intermediates has been centered on the finer grades, as heretofore, though there has been a good movement of a routine kind in most of the others. Call for diethylaniline and dimethylaniline also continues to be large and stocks are inadequate Higher prices have been named for the latter and are now in effect in the market, generally with offers firmly made. A feature of improvement noted in the market is the better feeling found in the market for benzoic acid, which is responding to a large activity on the part of consumers after a somewhat lengthy period of routine dullness. Prices have moved upward slightly accordingly and further increases are looked for by some in the trade on the supposition that continuance of the present better demand will soon bring about a stringency in the matter of stocks on hand.

Phthalic acid anhydride is receiving a fair call and keeps a good position at unchanged prices and the same is true of naphthionic acid as well as sulphanilic acid. Salicylic acid shows quietness generally, and the other acids in the list are maintaining their previous good position.

The anilines, salt and oil, are holding their own all around, so far as producers are concerned, they being generally well sold up for the present in both instances. Demand for the salt has slackened somewhat because of the higher prices, and second hands are asking slightly lower figures for small offers with a view to restimulating consuming interest. This has been without effect apparently and the market is rather quiet at present with buyers trading only as their needs become urgent.

Benzaldehyde is moving with steadiness and the market shows no change of importance. The same is true of benzyl chloride, which is not in large supply. Beta-naphthol and beta-naphthylamine are quiet and unchanged and naphthaline flakes are unaltered both as to demand and supply. Prices for the latter are repeated and a fair business in contracts for future deliveries is noted.

The following contains more detailed accounts of the individual markets for the important items on the list at New York:—

ACID BENZOIC.—Demand for benzoic acid has been picking up within the week, and the market reveals more firmness both as to undertone and prices. It is doubtful if any goods on the spot or nearby can be obtained under $2.80 per pound, while there are some sellers who are asking from $2.90 to $3 per pound.

ACID H.—While trading in this market is rather quiet at present, the market continues to hold its previously noted tight position, in that there are virtually no sizable quantities reported available, and prices are more or less nominal at $3.20@3.40 per pound for immediate shipments. Producers who have been reported sold up continue in that position and are not seeking new business for immediate shipment.

ACID PHTHALIC.—This coal-tar product is in fair demand, and the market shows steadiness, with stocks fair. Prices are being sustained by the prevailing conditions, and immediate shipments are quoted locally on a basis of $3.40@3.70 per pound for the crude, according to quantity and brand, and $4@$4.25 per pound for the sublimed anhydride, same conditions.

ACID PICRAMIC — No quotable change is reported in the market for picramic acid, the fact that only a few producers are making the material keeping the production rather insufficient for the current call, which is fairly large. Prices are repeated on a basis of $2.25@2.35 per pound for prompt shipments.

ACID NAPHTHIONIC.—Routine demand is still exhibited by the market for naphthionic acid, which is quoted at the unchanged price of $1.20@1.30 per pound for the refined acid and $1 @$1.10 per pound for the technical, prompt.

ACID SALICYLIC.—Consuming demand for both the technical and U. S. P. varieties of salicylic acid is fair and stocks are sufficient for the inquiry. The undertone of the market remains steady and prices are without apparent change at 70@85c. per pound for the technical, according to quantity and quality. The U. S. P. is held at 90c.@ $1 per pound for immediate shipments.

ACID SULPHANILIC.—No especial feature is reported in this market for the week, fair movement in a routine way being shown at unchanged prices of 32@34c. per pound for the technical and 42@44c. per pound for the sublimed, prompt.

ALPHA-NAPHTHOL.—Price levels are maintained with steadiness in the market for this coal-tar intermediate, and there is little of especial interest to the situation, other than that stocks are just about sufficient for the current demand. The crude is held at $1 @1.10 per pound and the refined at $1.50@1.60 per pound.

ALPHA-NAPHTHYLAMINE. — Demand for this intermediate is active and in good volume but producers state that their stocks are sufficient for the call and the market may be described as in a good position. For immediate shipments leading sellers are asking the unchanged prices of 60@65c. per pound.

ANILINE OIL.—Stocks of aniline oil available for spot transactions are still limited, but consumers are slackening their interest in the market and it appears somewhat quiet. Prices are being maintained generally at the recently prevailing level of 28@30c. per pound and the undertone remains steady.

ANILINE SALT.—Small quantities of aniline salt are being offered by second hands at 43c. per pound, though the generally prevailing market level is from 44 to 45c. per pound for spot goods, with some sellers declaring that 45c. per pound is the best price they would be willing to accept. There is a good call for the salt, but activity has slackened somewhat because of the high prices prevailing, consumers appearing unwilling to enter the market for other than urgent needs.

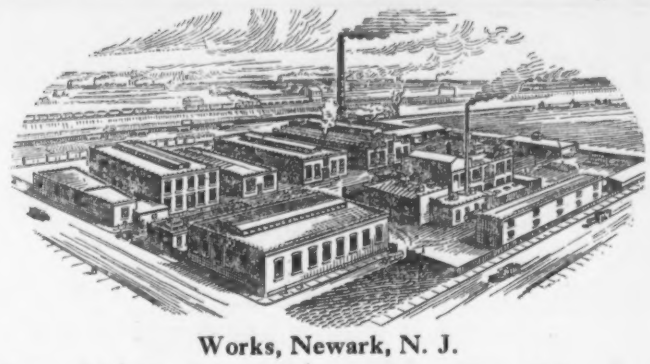
BENZALDEHYDE.—Fair activity is reported in the market for benzaldehyde, with supplies of the technical quality offered in fair amounts at the repeated price level of $3.50 to $4 per pound, according to quality and quantity. Stocks of the F. F. C. and the U. S. P. varieties are not so plentiful, however, and prices for those qualities are very firmly maintained by the leading sellers on the recently noted levels of $5.50@6 per pound and $4@4.25 per pound respectively.

BENZOL.—While leading producers state that the market for benzol shows little change as to production or consumption, it is stated with a fair degree of accuracy that there are fairly large quantities of the pure water-white material available and prices have eased off to a lower level of 22@ 27c. per gallon, with some fair-sized sales reported as recently consummated at 23c. per gallon at works in tanks. Demand for the material is rather routine.

BENZYL CHLORIDE.—Little change of importance is noted in the local market for benzyl chloride, with producers still making limited offers of the refined material on the unchanged price basis of $2.50@2.65 per pound for immediate shipments and of the technical quality at $2.25@2.30 per pound, prompt. Demand is fair and the undertone steady.

BETA-NAPHTHOL.—Prices for all grades of beta-naphthol are without quotable alteration and the market rules steady at the repeated levels. Fair demand, though of a routine character is noted. Immediate shipments of the crude are held at 55@ 60c. per pound, the sublimed at 85@ 90c., distilled at 65@70c., resublimed at $1.10@1.15 and the U. S. P. at $1.20@ 1.30 per pound.

BETA-NAPHTHYLAMINE. — Stocks



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of this coal tar product are sufficient for the current inquiry, which is regarded by leading sellers as fair, and prices are being maintained without change at the recently noted level of $1.65@1.70 per pound for the technical and $2.65@2.70 per pound for the sublimed for immediate shipment from nearby point.

CRESOL.—Call for the U. S. P. grade of cresol is fair, though stocks are adequate for more business. Prices are being maintained by sellers, who assert that cost of production would not warrant any lowering of quotations and immediate shipments are named at 18@20c. per pound. The ortho crystal material is held at the repeated price level of 35@40c. per pound on the spot or nearby.

DIETHYLANILINE. — Producers of diethylaniline state that there are only small stocks available to meet the good demand which is in evidence and prices are firmly established on the basis of $4@4.25 per pound for immediate shipments. It is stated that there are only a few producers who are able to supply spot goods.

DIMETHYLANILINE. — There is a very firm market for dimethylaniline, prices being slightly higher than a week ago, the new level being due to the further scarcity of stocks for immediate shipment. Leading sellers are now asking a basis of 75@85c. per pound for fair quantities of this intermediate.

DIPHENYLAMINE. — Difficulty is still being experienced by consumers in locating adequate supplies of diphenylamine, there being a good movement of this material to producers of explosives as well as to the producers of dyestuffs. Prices are firmly etablished on the bais of $1.05@1.10 per pound for prompt commitments.

DINITROBENZOL. — The firmness which is characteristic of other coal tar products is likewise to be found in this market, with supplies small and prices tightly maintained by the leading sellers, who report stocks available. Immediate shipments of the intermediate are priced at 40@42c. per pound.

METANITRANILINE.—Little that is new has developed in this market within the week, and it may still be termed steady in tone with trading quiet and prices irregular, owing to the variety of goods offered. Immediate shipments are priced from $1.25 to $1.50 per pound, according to the quantity and the brand desired.

METAPHENYLENEDIAMINE.—Sellers of this coal tar are asking the repeated prices of $1.85@2.05 per pound, according to the quantity. They report that the demand from consumers is fair, while stocks are adequate, the market maintaining a steady undertone.

METANITROPARATOLUIDINE. — This market shows a steady undertone with demand regarded as adequate to the stocks in hand, they being small. Prices are maintained at the repeated level of $5.50@6 per pound for immediate shipments.

MONOETHYLANILINE.—Quietness rules in the market for this coal tar intermediate and the undertone shows steadiness, with prices slightly lower at $1.60@1.80 per pound, according to quantity.

MONOCHLORBENZOL.—At the recent advance to 19@20c. per pound the market for this coal tar product is steady and it is stated by the leading sellers that there continues to be a good demand for the material for immediate shipment. This has served to take up the recent slack in the market and stocks are not as freely offered as heretofore.

NAPHTHALINE.—Spot trading in the market for flake naphthaline is quiet and the market shows nothing of feature at this time. Prices are maintained at 9@9¼c. per pound according to quantity with reports that fair business in contracts at the inside figure is being done.

ORTHO-TOLUIDINE.—At 95c.@$1.10 per pound, the price range for orthotoluidine shows no appreciable change and traders report that it is quiet generally with some routine transactions going on.

PARANITRANILINE. — Prices for paranitraniline are without change and the market retains its previously noted firm undertone on a good volume of inquiry and a continued scarcity of stocks for immediate shipment. The trading is largely confined to future shipments owing to the scarcity of spot goods and contracts for such are being named at $1.60 per pound while the more or less nominal figure heard for spot stuff is $1.80 per pound.

PHENOL.—Fairly free offers of U. S. P. phenol continue to be heard in the local market and the undertone shows a weak trend. Prices are accordingly somewhat nominal and while it is stated that there is material available at 43c. per pound for spot goods, it is indicated that the prevailing market level is unchanged from that of a week ago at 44@48c. per pound, according to quantity and seller.

TOLUOL.—There is nothing particularly new to state of this market with releases of the commodity to private consumers being made from time to time in rather sparing quantities at the fixed basis of $1.50 per gallon for tank cars at producers' works and at $1.55 per gallon for carboy in any quantity.

XYLOL.—Fair movement, though of a routine character, is reported in the market for pure, water-white xylol and prices are being maintained with steadiness by the leading producers on the basis of 45@55c. per gallon for immediate shipments and according to quantity and brand. There is a fair call also reported for the commercial at 30@35c. per gallon.

TRADE AND NEWS ITEMS.

DeWitt Steigers, president of the St. Louis Hide and Tallow Company, who has been seriously ill during the last few months, is now improving.

The Ouachita Cotton Oil Company, of Camden, Arkansas, is to rebuild the mill burned recently. W. H. Warnock is president of the company.

J. L. Hopkins, president of J. L. Hopkins & Co., importing drug merchants of New York, has just returned from an extensive trip through the West.

William R. Warner & Co., Inc., had a formal opening of their new research and control laboratories, 113 West 18th Street, this city, last Thursday afternoon.

A meeting of the Louisville Paint, Oil and Varnish Club was held on the night of September 26, at the Pendennis Club, at which time delegates to the national convention were elected.

Mr. Garretson, of the aniline department of the Hellenic Chemical and Color Company, Inc., has joined "The Colors." Mr. Knecht, of Heller & Merz, is now in charge of this department.

John H. Anderson, secretary and treasurer of the Durbon Paint Company, spent several days in New York last week, where he completed arrangements with Marden, Orth & Hastings, to handle the products of his company in the Eastern territory.

James M. O'Hara, formerly manager of the Chicago branch of Marden, Orth & Hastings Corporation, in Chicago, and A. G. Chambers, who represented the same corporation in Michigan, have associated themselves with the Holland Core Oil Company, of Chicago.

It is reported in Louisville that the Kentucky Distilleries and Warehouse Company, of Louisville, had purchased the plant of the Globe Distillery, at Pekin, Ill., for $635,000. It is said that the Kentucky Distilleries will operate the plant for the manufacture of denatured alcohol.

Two women were injured early on the morning of September 27 in a fire which followed an explosion in the factory of the Victor G. Bloede Company, manufacturing chemists, at Caton avenue, Baltimore. Two machines used for grinding corn starch burst almost simultaneously.

Alexander Joseph, of the Pfiffer Color Company, of this city, has donated his home in East Orange, N. J., to be used as Red Cross headquarters for the duration of the war. Mr. Joseph and his family have moved to New York, where they will live while their home in East Orange is occupied.

The Ross-Gould List and Letter Company, of St. Louis, reports the receipt of a letter from a firm in Bombay, India, which seeks to get in touch with American aniline dye manufacturers who can supply five tons of one color and grade of aniline dye per month. The Bombay company asks for firm quotations and samples.

The E. H. Haines Distributing Company, Inc., has acquired the property at 107 West 31st street, Chicago, where it will conduct a public warehouse business, primarily for the paint, oil, varnish and soap trades. This corporation will be separate and distinct from the original business of E. H. Haines (established 1872) which will continue without change.

Beginning Thursday night at midnight all cotton gins throughout Mississippi ceased ginning for a period of ten days, in compliance with an order issued from the office of P. M. Harding, federal food administrator for Mississippi, in the early part of the week, following a conference held at Vicksburg, Miss., which was attended by representative farmers, ginners and cottonseed crushers from various sections of the State.

The Louisville Paint Superintendents' Club recently held a meeting at the Louisville Old Inn, at which time F. W. Burnside, of the L. C. Gillispie & Son, of New York, made a talk on varnish gums and varnish oil. Mr. Burnside gave an excellent history of where these gums are found and gathered and their uses in the varnish trade. Another meeting of the club will be held on October 3, at which time Dr. Thompson, of the National Lead Company, will make a talk on the production and use of white lead.

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By DR. FRANK CRANE

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On this Western Continent Destiny has been training the young Galahad for the rescue of the world.

Nature has an antidote for every poison.

American Democracy is the Antidote for German Autocracy

Every one of our wars has been for the same purpose: to liberate the common man.

The Revolution of 1776 was to get the privileged class of England off the backs of the American Colonists who were redeeming this wilderness.

The War of 1812 was to rescue American seamen from oppression.

The Mexican War was to liberate the settlers of Texas from the whimsy cruelty of Mexico.

The Spanish War was to save the people of Cuba from the tyranny of the Spanish Government.

Every time our army and navy have gone forth it has been to clean up some filthy autocracy.

But all of our wars have been but a preparation for our present task. We did not realize it. No man foresees his destiny, no nation foresees its mission. Yet the life of every nation, as of every man, is a plan of God.

God has been piling up riches on this continent until **we are the wealthiest nation in the world.** He has been sharpening our inventive skill and our business ability. Our training has been intensive.

Now God says, "America, you are come of age. All I have done for you is to prepare you for the present conflict, for your real work. Go forth and make the world a decent place to live in."

At this time every son of America is called upon to do his utmost. The slacker is a traitor.

We are sending men across the ocean, men who are physically and mentally the pick of the world, an incomparable army. **But the men at home must back them up.**

It is as much our solemn duty to put our money into the Fourth Liberty Loan as it is the duty of the soldier to stand firm at his post in battle.

The Fourth Liberty Loan is to be our **supreme effort.** God helping us, we shall not be found wanting. Let us subscribe all we can, **and a little more.**

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THIS SPACE CONTRIBUTED TO WINNING THE WAR BY

Mutual Chemical Company of America, - New York

Dye Bases and Dyewoods

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be be found on pages 3, 4, 5, 6, and table of contents on page 2.

Saturday Noon, Sept. 28, 1918.

The general market for dye bases and dyewoods at New York can be called a firm affair almost throughout the list at the present time. This is due to the fact that there are but small stocks available of most of the items in the list of natural dyestuffs, while the major portion of the chemical agents herewith grouped are likewise in none too plentiful supply, though just at present some of them are adequate in quantity for somewhat larger business and, therefore, do not show the same degree of outward steadiness as do the vegetable dyestuffs.

Features are few in the week's trading in this market as a whole, the volume of business passing being necessarily restricted by the quantities of material available for transactions. It has been of a rather satisfying size, however, and prices have at the same time been maintained evenly, with one or two instances of higher figures being asked. Demand for some of the items has fallen off because of the shortage of goods, due to the inability of importers to get sufficient shipping space from primary points. For others the call has been large, active and continuous.

Albumen, both egg and blood, is in good consuming demand, and sellers are finding it rather easy to maintain their previous price levels, that for the blood material being more nominal than actual. This same situation is true of the egg yolk commodities, and the vegetable substitute for the blood material is in good demand.

Annatto is receiving a better call but stocks are sufficient for it though, it is stated by the trade, they are not heavy and stiffer prices would prevail with the setting in of a substantial increase in demand. Cochineal is still a very hard item to locate as to material and prices continue to be sort of "will-o'-the-wisps." Indigo is quiet, that is the vegetable kind, but there is a more active demand from consumers who are showing a large interest in the synthetic product, the latter being firmly priced by its producers.

Logwood is in the same nominal position which has been previously reported and fustic is getting scantier in supply though the market has not tightened up to any appreciable extent. Logwood extract is in steady demand of large proportions and prices for the various kinds are strong. Fustic extract is also moving actively and prices are well held. Other extracts which show a good position are sumac, quebracho and quercitron as well as hematine and cutch.

There is considerable irregularity noticeable as between the two markets for bichromate of potash and bichromate of soda. While the former may be termed barely steady at a recent decline in prices among second hands it is without change in price as far as producers are concerned. On the other hand the soda material is firmer, if anything, and shows signs of stiffening up, dealers being but a fraction under the prices of first hands and reporting a small movement though stocks are also restricted.

More detailed information is to be found in the following as to the individual markets for the dye bases and dyewoods listed at New York:

ALBUMEN.—Call for the various kinds of albumen is steady and sellers report that stocks on hand are relatively light for the current consuming needs. This is giving the market a sustained firm undertone and prices are being maintained by the leading sellers on the basis of the previously reported market levels of $1.20@1.25 per pound for the prime Chinese egg material and 80@90c. per pound for the importer blood material. The last-named kind is exceptionally hard to locate and more nominal than actual in price, the same condition prevailing in regard to domestic blood albumen which is quoted at 65@70c. per pound on the spot. Vegetable albumen, used as a substitute for the blood material, is firmly priced at 65@67c. per pound. Egg yolk is holding at 45@47c. per pound for the granular variety and 70@73c. per pound for the spray process material.

ANNATTO.—Though there has been no alteration in the price levels in this market, a better feeling is evident among traders, based upon an improvement in the demand. Stocks are adequate for the call but not burdensome and prices are in a position to respond to any substantial increase in the demand. Fair sales are reported of both the fine at 33@34c. per pound and the seed at 8½@11c. per pound, depending upon quantity, quality and seller.

ANTIMONY SALTS.—Leading sellers of this material state that they have only small stocks to offer and are very firm in their refusals to do better than 70c. per pound for the 67-per-cent salt on the spot or nearby. Demand for the material, while more or less routine is sufficient to prevent any accumulation of the material. Nothing is heard of the 47-per-cent salts in this market.

BICHROMATES.—There is no similarity between the markets for bichromate of potash and bichromate of soda at this writing, the first-named showing unmistakable signs of irregularity, while the latter displays equally as positive signs of better feeling and readiness to respond upward in prices. The potash material is receiving only a small call from consumers, so far as the spot market is concerned, and second hands are inclined to make free offers around 42@43c. per pound with a possibility that 41c. could be obtained for desirable business. On the other hand producers are not offering under 44c. and some want 45c. per pound, the ranges in both second hand and producer prices being governed by quantity and brand solely. The soda bichromate is not in large supply and, though the recent demand is not what could be termed large, it is sufficient to cause the market to display a firmer tendency with dealers refusing to shade 23c. per pound and producers asking 24@25c. per pound generally, quotations being governed by quantity and brand.

BRAZIL WOOD.—There have been no new developments in this market and prices remain as they were a week ago at $52 to $70 per ton, depending upon position of the wood, quantity and seller. There is a small call for the wood, but it is not sufficient to induce the holders of the wood at the Gulf ports to ship their stocks northward without previous assurances of sale. Hypernic extracts are in good demand and prices are being maintained at 45c. per pound for the solid and 30@33c.per pound for the 51-degree twaddle.

COCHINEAL.—No change has occurred in the conditions governing cochineal at this point and there are virtually no offerings in the open market. Consumers are not showing any sizable interest, however, and the market remains quiet with prices ranging from 80c. to $1 per pound, depending upon quantity, quality and seller.

CUTCH.—Spot supplies of all grades of cutch, excepting the Borneo variety, in bales, have been cleaned up apparently, there being none in evidence at this point, while there is at the same time a fairly active demand for them. The small quantities of Borneo available are tightly held, and prices are higher at 21@23c. per pound, according to quantity and seller. There are no prices being named in the open market for the Rangoon or South American at this time. Cutch liquid is holding at 12@14c. per pound, and cutch extract is named at 11¼@11½c. per pound at Seattle, 68 per cent. tannin basis.

DEXTRINES.—Prices are repeated for corn dextrine, which is in a firm position on a continued good demand. The canary variety is named at 8c. per pound, while the white rules at 8½c. per pound on the spot in a large way. Domestic potato dextrine is priced at 20@20½c. per pound, with some asking up to 21c. for spot goods, and the previously mentioned nominal position of imported potato and British gum continues, there being no offers or prices heard in this market. Domestic potato starch holds at 12½@13c. per pound for bags, while Japanese potato starch is offered in limited quantities at 13@13¾c. per pound, according to quantity and seller.

DIVI-DIVI.—High prices are still asked for divi-divi and consumers are slackening their interest, with the result that the market presents a quiet appearance, though firmly established on the basis of $70@80 per ton, according to quantity and quality. There are no large quantities of the beans available, according to general opinion in the trade, and steamship companies are not showing any desire to accept this commodity for shipment from primary points because of its bulkiness. Divi-divi extract having a 25 per cent. tannin basis is quoted at 5½@6c. per pound.

FUSTIC.—There's a more or less nominal situation presented in the market for fustic sticks, with stocks low and sellers offering various quantities at irregular prices, according o the quality and point of origin. The range is a wide one, running from $50 per ton for Haitian or other West Indian wood up to $70 per ton for prime Brazilian or Mexican wood. Demand is fair.

FUSTIC EXTRACT.—Heavy demand in this market and the situation shows firmness all around. Manufacturers of the extracts of this wood state that they are having no difficulty at present in meeting the call from consum-

(*Continued on page 95.*)

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Saturday Noon, Sept. 28, 1918.

In the fertilizer business the one thing that dwarfs all other matters is the question of labor. Fertilizer material men hear of little else. Their customers, who would naturally be heavy buyers at this time, are to an extent keeping out of the market, with the explanation that there is no use buying raw materials when they have not the labor to handle them. The labor situation seems to be much more acute in some sections than in others. The Baltimore manufacturers of commercial fertilizer seem to be particularly hard hit by the labor shortage. All the manufacturers in the North are very short of help, but the situation does not seem to be as bad in the South, and very good sales of fertilizer materials are being made to Southern consumers. Some people who are watching the situation very closely say that there is not going to be nearly as great a demand for fertilizers next spring as had been anticipated, and here again the explanation of the condition is found in the shortage of labor. Farmers are suffering quite as much from lack of help as are manufacturers, and there is no use fertilizing land if there is not the labor to cultivate it and harvest the crop. The talk of there being a cut in cotton acreage if the government fixes the price of cotton, however, does not seem to be taken very seriously by men in the fertilizer business.

While the demand is rather spotted, prices hold well. Tankage is strong, and Chicago prices are 5 cents a unit higher than a week ago. Fish scrap is unchanged. Bones are very steady, and raw ground are up to $50 a ton. All packing house fertilizers are very firmly held by producers, and there is no indication of a disposition to shade prices.

There is very little demand for phosphate rock just at the moment, and this market is somewhat disturbed by the fact that there has not as yet been a satisfactory settlement of the wage dispute. On the first of the month an increase in wages was made, but producers have not consented to recognize the union, and the men are not satisfied with the advance granted. Conferences are being held from day to day, and an effort is eing made to straighten the matter out, and in the meantime the men are remaining at work, and there have been no strikes reported. The matter is far from settled, however, and for this reason the future is uncertain. The prices are nominally unchanged, but it is a waiting market.

There is no longer any resale nitrate of soda offering, and this is very satisfactory to the government, which all along has frowned the effort to do a resale business in this material. There is still some sulphate of ammonia being offered at resale, but this business seems destined to fade to nothing also. The government would certainly not encourage it if it should find any domestic producers letting any of their products get into the hands of middlemen who would offer it at resale.

Following are detailed reports on the principal fertilizer materials:—

NITROGEN FERTILIZERS.

BLOOD TANKAGE.—There is a steady market in all sorts of tankage, and sellers seem to be able to command their prices. Blood tankage holds at $6.90, and there seems to be no tankage offering f. o. b. Chicago lower than $6.80 and 10c. As was stated last week, some sellers have been claiming that the price is as high as $6.85, but business has been done this week on the basis of $6.80 and 10c. The scarcity of ammoniates makes consumers eager for any sort of material that contains ammonia, and although the tankage price is high, it does not seem difficult to maintain it.

DRIED BLOOD.—The price of dried blood remains steady at $7.20@7.25 per unit; this price is f. o. b. New York. There is a steady demand from the South, which is the large consumer of this class of material, and, although the price is high, the undertone of the market is steady. As is the case with all packing-house fertilizers, the producers are very firm in their ideas as to values, and buyers have to meet their terms.

FISH SCRAP.—There continue to be complaints about the catch in Chesapeake waters, but the price of fish scrap is already so high that no effort has been made to push them higher since our last report. The people in the business say that the costs are so high this season that the business is not very profitable, even with fish scrap as high as it is. Dried fish scrap, 11 per cent. ammonia, and 14 per cent. bone phosphate, f. o. b. fish factory, is $7.25 and 20c. per unit; wet, acidulated, 6 per cent. ammonia, 3 per cent. phosphoric acid, is $7 and 75c. per unit.

HOOFMEAL.—In common with all ammoniates, hoofmeal shows no weakness, in spite of the price. The sellers' end of the market is, of course, in strong hands, and there is no disposition to cut the price to encourage buying. There has been no change in the market since our last report, and the quotation is still $6.70@6.75 per unit.

NITRATE OF SODA.—There is no longer any nitrate of soda offering at resale, and the only quotation is that of the government as fixed for the month of September. This is $4.32½ per 100 pounds for 95 per cent. goods and $4.45 for 96 per cent. The government has not approved of the effort to carry on a resale business in nitrates since it took control of the situation, but made no objection as long as it was possible that dealers were selling old stocks. There is no longer any old stocks to offer, however, and the price is now the government price.

SULPHATE OF AMMONIA.—There is still a little sulphate of ammonia offering at resale, but the amount is very small, and in a very short time this market will be in the same position as the nitrate of soda market, as the government does not allow any sulphate of ammonia it may not need to be vended around the market to get the highest price possible. The leading producers turn over to actual consumers what the government permits them to sell at around $4.75 per 100 pounds, so that seems to be the proper quotation.

PHOSPHATES.

ACID PHOSPHATE.—The demand for acid phosphate is not particularly active just now. Consumers are too much in doubt as to just what the future holds in store that they are not buying more than they need for their immediate requirements. There are many uncertainties confronting producers as well as consumers, and the cost of production is constantly increasing, so that producers are not at all anxious to increase business by shading the price. In bulk acid phosphate is quoted at $18 a ton in New York and $16.25@17.50 at Southern ports.

BONES.—Raw ground bones are in good demand and stocks are small. In consequence it is an advancing market, and sales have been this week at $50 a ton. In all grades of bones the undertone of the market is firm. Rough hard are quoted at $30@32 a ton; ground steamed, 1½ per cent. ammonia and 60 per cent. bone phosphate, at $31, and 3 and 50 per cent. at $37@37.50.

PHOSPHATE ROCK.—Some of the leading producers of phosphate rock say that new business during the past week has amounted to little or nothing. The producers are still having their troubles about labor, and are more interested in this than in anything else. An advance in wages was made the first of the month, but the advance was not what was asked for by the men and the union was not recognized. The men have continued working, but the matter has not been settled, and a number of conferences on the matter have been held this week, some of them in New York. The future is uncertain until some definite agreement has been reached, but there seems to be little reason for believing that the industry will be tied up, and prices were advanced weeks ago in anticipation of labor trouble, so there is no excuse for another advance at this time. The Committee on Fertilizers of the Chemical Alliance has sent out a notice from Secretary H. G. Phillips, of the Priorities Board, which says:—"Producers of phosphate rock are not on the preference list as an industry. However, we are sending application blanks (P. L. Form No. 1) to such producers, and it is our intention to give each plant individual consideration." P. L. Form No. 1, which is referred to, is an individual application for place on the preference list.

POTASHES.

There is little new in the potash situation. Some consumers seem afraid to use the low-grade American goods, in spite of the fact that the little borax some of them may contain has been proven by the government to be non-injurious. It would seem that perhaps some importers of foreign material, not now available, are trying to protect the goods by creating prejudice in the—probably vain—hope that they may be able to do business as of old after the war. Japanese potash is very well liked, and bought readily when offered if the price suits. The high-grade American muriate of potash is proving so valuable in many lines of chemical manufacture that little of it is going to

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the fertilizer industry. Muriate of potash, basis 40 per cent., is quoted at $4.55 a unit, or $182 a ton. High-grade goods is quoted from $260 a ton up to as high as $325.

PYRITES.—The government has so close control of this situation that there is no market. Imported pyrites come in only under the strictest regulations and only in such quantities as the government believes to be absolutely necessary. There is an increasing quantity of domestic being produced, but, of course, the total is very small when compared to the normal consumption in this country. There is a good demand for domestic concentrates, which are quoted at 30@33c.

ATLANTA.

Atlanta, Ga., Sept. 28, 1918.

Trading in fertilizer materials continues slow on this market, with the exception of that in acid phosphate, in which every one seems anxious to secure their needed supply before it goes still higher. The activity in bulk acid has boosted the price, which is holding firm at $17.50@18 for October delivery. There is very little doing in other lines, on account of high prices, though ammoniates continue in demand wherever they can be obtained. Trading in cottonseed meal at the new government prices has opened rather slow. Good demand for mixed goods the coming season is anticipated, and manufacture will be limited only by the available supply of materials.

Cottonseed meal, 7 per cent., new government price, $53 in bags; $49 bulk, at the mills.

Blood is scarce and in great demand; firm at $7.60 Atlanta; tankage, $7.00 and 10, Atlanta.

Fish guano offered at $7.25 and 10, Norfolk.

Potash, Nebraska, $5 for immediate delivery; $5.25 for futures.

Acid phosphate, $17.50@18 in bulk, October and November delivery; coast points, $17.

Phosphate rock, $4.50@5 per long ton, Florida mines.

Pyrites:—Only domestic offering; no quotations.

There is no nitrate of soda, sulphate of ammonia or cyanamid available in this market.

BALTIMORE.

Baltimore, Sept. 26, 1918.

The manufacturers of fertilizer mixtures are still engaged in efforts to get out goods, but their difficulties in consequence, mainly of a shortage of labor, are in no wise diminished, and the movement lacks the proportions which it should attain and would otherwise reach. There is every prospect that shipments will go out in considerable volume for another month, but meanwhile the climatic conditions may become uncertain and the delay in working the soil for the reception of winter wheat, for example, and of getting the seed into the ground may prove well nigh fatal. The experience of the Maryland farmers last spring showed that much of the winter wheat had been planted so late that its development by the frost was retarded to such an extent that much of the acreage yielded not more than four or five bushels an acre, while the crops sown earlier yielded from twenty-five and even more bushels. Much of the wheat simply did not come up at all, and the balance failed to attain the growth essential to the development of full, big grains. Something of a similar sort happened to other crops, which shows that the time lost in getting the fertilizers into the ground frequently cannot be made up, the conditions favoring such regaining of lost days being subject to serious modifications. Therefore, the fertilizers that are not bought and utilized this year up to a certain date may not be bought at all, the farmers being so placed, perhaps, that it will not avail them to invest because the investment is sure to prove unproductive. With the workers in the fertilizer factories limited, it follows that more rapid headway could not be made when the movement once materially fell behind. It is much the same as the case of a train drawn by an engine of small tractive power, which, when once behind the schedule, is likely to increase the margin of lateness rather than lessen it. With the manufacturers thus handicapped, it is to be expected that the inquiry for crude materials also should lag, the users not being in a position to know just where they stand. They may need considerable additional quantities, but the presence of large stocks of mixtures in the storage spaces prevents them from knowing whether such supplementary requirements will develop, and meanwhile the manufacturers will be in no hurry to anticipate wants that may not assert themselves at all. All this apart from the fact that the buyers of crude stocks are occupied with work other than that of providing for actual and possible necessities. Of course, some supplies are always moving, there being no period of the year when some sales and purchases are not recorded. But as compared with a really active period, the current business must be regarded as small or even insignificant. All this, however, does not affect the ideas of the sellers as to values, and any expectation that bargains are to be found later may as well be abandoned.

FISH SCRAP.—The reports about the results attained by the vessels of the menhaden fleet operating in the Lower Chesapeake Bay are not any more favorable than they have been for the greater part of the season, the catch of fish continuing small and the additions made to the volume of scrap decidedly limited. The vessels continue at work, because, to lay them up now, would mean a greater loss than to keep on going, even if the returns leave much to be desired. Information available is still to the effect that the yield along the coast is far better, but the Chesapeake Bay craft would have to go too far after the menhaden to bring them to the factories in good condition, though the cool weather is calculated to increase such a possibility. The factories are asking $7.25 and 20 for scrap down the bay, which makes the price still somewhat higher than that of other animal ammoniates, with which it competes. At that, the prospect now is that the factories will end the season more or less on the wrong side of the ledger, the high cost of operating the boats being against profits.

TANKAGE.—With still another month of calls for mixtures ahead of them, the fertilizer factories here stand to make material additions to the volume of business done for the season; but even this extension of the period when the products of the factories are in request is not likely to bring the movement up to the proportions of the corresponding period of last year. The prevailing shortage of labor keeps the factories more or less behind their orders, it being physically impossible to catch up with the calls now that the producers have fallen so much behind. The users of and dealers in mixtures are somewhat disposed to complain that they have not been looked after as should have been the case, but they have only themselves to blame, the warnings sent out to make early provision having been clear enough to obviate procrastination. As the factories still find themselves with considerable finished stocks on hand and do not know how far these will carry them, they are in no hurry to place orders for tankage, and the general tone of the market is one of quiet. This, however, does not affect the ideas of the large Western producers, who continue to ask $7.40 and 10 for 11 and 15 high grade ground tankage, c. a. f. basis Baltimore. It cannot be said that any business is being done on such a basis, but the general fertilizer situation is such as to make it altogether likely that the price mentioned will be the market when the movement once sets in strong, which means when needs of some urgency are encountered.

GROUND BLOOD.—The South, as the chief buyer of ground blood, remains in a backward mood, and there are no developments in the trade that might tend to give it a striking character. There is in fact an aspect of pronounced quiet, with the quotations perhaps moved up somewhat and now being around $7.35 c. a. f. basis Baltimore, which is an advance of 5 cents per unit. Despite the apparent lack of interest on the part of buyers, the available stocks of ground blood may be expected to find takers readily enough when the movement is once on.

ACID PHOSPHATE.—There are no changes of consequence in the situation with regard to acid phosphate. Some orders are being taken and filled, but the movement does not attain impressive proportions. Meanwhile, however, the sellers are not forcing business and manifest a feeling of confidence as to the future. The current quotations of $16.50 for 14 per cent. acid phosphate and of $17.50 for 16 per cent. stocks may be largely nominal, but efforts to place orders for any considerable quantity would, in the opinion of well informed members of the trade, promptly force the asking price up to the level mentioned. Of course, the producers are not at all at a loss for takers of their output, outsiders being in competition with the manufacturers of fertilizers to as great an extent as at any previous time.

NITRATE OF SODA.—There is nothing new to be said about the situation as to nitrate of soda. Spot continues to be out of the market, the imports going to users other than the fertilizer factories, and only an occasional lot may be expected to change hands. Here and there a factory may have a larger quantity of nitrate than it feels it has use for, and may regard the present as a favorable time to let go of the excess, but beyond this there is no business. What such occasional lots bring depends almost entirely upon circumstances.

SULPHATE OF AMMONIA.—There is a fairly general absence of quotations on sulphate of ammonia for the reason that the production is allotted in accordance with certain needs outside of the fertilizer trade, and very little reaches the latter. Of late, however, some sales to producers of fertilizer mixtures have been made, with the returns fluctuating according to the circumstances in each case. On the prevailing basis the interest of fertilizer men in sulphate of ammonia is necessarily languid.

POTASH.—There are no new developments with regard to potash, which material reaches the market in relatively small quantities only; and at the current prices of $4.50 for the lower grades and $5 for the better quality of potash, manufacturers of mixtures are not encouraged to enter into liberal commitments.

BONE.—The outstanding feature of the market for bone is a further advance in both raw and steamed bone, which brings 4½ and 48 ground raw bone up to $43 and 3 and 50 ground steamed bone to $39. Even at these prices there are no large offerings, for the reason that the available stocks have been fairly well cleaned up, and there has been no time as yet to secure other accumulations.

CHICAGO.

Chicago, Sept. 26, 1918.

The price trend in the Chicago fertilizer market continued its upward journey this week, with the result that in several lines there were decidedly higher figures than were quoted last week. Bones continued to attract the greatest interest among traders, but there were signs that activity would be increased with reference to other lines before many days have elapsed.

Following were the nominal quotations based per unit ammonia, loaded bulk in cars, Chicago:—Packers' high grade ground blood, $7.10; packers' unground and crushed blood, $6.75@6.85; packers' high grade ground tankage, $7; packers' unground and crushed tankage, $6.60@6.75; renderers' unground tankage, $6.35@6.50; ground concentrated tankage, $6.85; hoof meal, $6.75; hair tankage, $4.25@4.50; garbage tankage, $5.15; liquid stick, packed in double-headed tierces or sellers' tank cars, $4.15@4.30.

These prices are based per ton, loaded bulk in cars Chicago:—Unground steamed bone in wet condition, $21@22; unground steamed bone, commercially dry, $25@25; ground steamed bone, $29@30; raw bone meal, $38@40, according to analysis and quality; junk bone, $32@35; packers' jaw and knuckle bones, $47.50@48.50; hog bones, $42.50@45.

TETRAPHOSPHATE.

New Italian Fertilizer Reported as Good as Superphosphates.

A new fertilizer called tetraphosphate is being manufactured in Italy, which, according to technical experts, is equally as good if not better than superphosphates, which contain the same amount of phosphoric acid, and which costs considerably less to produce.

"Tetra," as it is known in commerce, was invented by Prof. Stoppani, of Bologna, in 1914, and the process was patented and purchased by an Italian company, which has undertaken to exploit the invention both in Italy and abroad. Considerable progress has been made since 1914 in the industry in Italy, notwithstanding the difficulties at present in obtaining the phosphate rock and reactive agents. There are eleven plants in operation, seven of which are administered by the Italian Agricultural Syndicate. The production amounts to 500,000 quintals a year, a supply which, it is stated, is far from meeting the demands of the Italian farmers. Four new plants are in process of construction.

Another plant is now being worked at Debajeh, near Luxor, on the Nile, the production of which is 200,000 quintals a year, and a similar plant is being erected at Kaseir on the Red Sea, where after the war it is hoped to manufacture not less than 2,000,000 quintals a year. The rock found in these districts is very rich, viz., 60 per cent. and 70 per cent., respectively.

The feritilizer is manufactured very simply as follows:—In a specially constructed furnace the natural phosphate-rock powder is roasted for several hours at a temperature varying from 600 to 800 degrees centigrade, together with a powder, constituting about 6 per cent. of the mixture and forming a reactive agent and composed of equal parts of calcium, sodium, and magnesium carbonate, with a small proportion of sodium sulphate. After leaving the furnace the product is

hydrated by cold phosphoric acid and for practical use is mixed with sand or dry earth until the necessary strength is obtained.

From experiments undertaken by a special commission appointed by the Italian Minister of Agriculture the use of this new fertilizer on wheat, rice, potatoes, oats, beans, and clover, has given favorable returns, and its fertilizing quality has been pronounced equal and sometimes superior to "super," over which it is claimed to have the following principal advantages:—

1. Freedom from causticity, acidity and deterioration.

2. Simple and less costly manufacture. (The writer has been informed that the cost of a plant to manufacture, for example, 100,000 quintals of "super" by the acid process, with lead at the present price of 1 franc per kilo would be approximately 1,000,000 francs, as compared with 150,000 francs for a "tetra" installation of the same power and output.

3. Its allowance of the utilization of low-percentage natural phosphate. The manager of the Italian company considers a mineral containing 30 per cent. of "anidrica fosforica" a low-percentage mineral, and this would yield, it is stated, 14 to 16 units of phosphoric acid.

The French Government has recently sent to Italy the superintendent of the agricultural school at Rennes to make investigations and carry on experiments in Italy with this fertilizer, and he has reported favorably on his findings.

Dye Bases and Dye Woods.

(*Continued from page 91.*)

ers, but it is expected that current consumption will soon overcome this condition, because of the curtailment of arrivals of the raw wood. Fustic liquid, 51-degree twaddle, is held at 15@16c. per pound, while the solid extract ranges from 26c. to 31c. per pound, according to quantity and brand. Crystals are named at 30@33c. per pound, prompt.

GAMBIER.—The market for various kinds of gambier is quiet at present owing to the lack of interest on the part of consuming buyers, and as a result the undertone shows signs of easiness in some directions. Offers of the Singapore cubes are more free, though supplies are not heavy, and in some quarters lower prices are named, though the figures of 25c. per pound thus referred to is hard to trace. The generally prevailing price range for the cubes seems to be 28c. to 31c. per pound, with the outside asked for goods at Seattle for October-November shipment. Common gambier is priced at 21@23c. per pound, and the plantation kind on a parity with that grade. Gambier liquid, 25 per cent tannin basis, is steady at 17c. per pound.

INDIGO.—Consumers are showing only a small interest in the local market for natural indigo, apparently giving the bulk of their attention to the synthetic product, which shows a firm undertone at $1.15@1.25 per pound for immediate shipments of the 20 per cent paste. The prices for the natural product are unchanged, with Bengals quoted at $3@3.75 per pound, according to quantity and quality; Kurpahs, Oudes and Guatemalas at $2.25@2.75 per pound, and Madras nominal at 90c.@$1. Indio extract is receiving some small attention at 26@30c. per pound. Indigotine holds firmly at $4 per pound on the spot.

LOGWOOD.—There is little to be said about the logwood market that is new at this time. No change has been reported in the matter of availability of supplies, the market being still virtually bare of offers and nominal in price at $50@55 per ton for prime sticks. Chips are held at 4@6c. per pound and are receiving a very good call at the moment.

LOGWOOD EXTRACT.—Firmness continues to characterize the market for logwood extract, with stocks scanty and tightly held by the few who have goods to offer. Producers who withdrew quotations some time ago are still out of the market, and dealers possess but small quantities for disposal. Prices are nominally without change at 20½@22c. per pound for the solid, 22½@27½c. for the 51-degree twaddle and 9½@ for the 510-degree twaddle and 9½@10½c. per pound for the 42-degree liquid.

PRUSSIATE OF POTASH.—While there are no pressing stocks of yellow prussiate of potash reported available, offers of the material are being made in a fairly free manner by second hands and prices are off somewhat, though the undertone is steady at this time. Spot goods are quoted at 95c.@$1 per pound, there being but small demand from consumers, who are obtaining their needs without difficulty. Red prussiate is scarce as ever though and prices are firm for that variety at $2.30@2.50 per pound, depending upon the quantity and seller.

PRUSSIATE OF SODA.—The general market level of prices for yellow prussiate of soda is 41@42c. per pound, but it is stated that there are some second hands who are cutting this level to 39@40c. per pound, in efforts to stimulate demand. Their efforts have apparently been without success to date, as only small parcels are reported changing hands in a rather routine movement to small consumers. The market presents a barely steady undertone.

SAGO FLOUR.—This market continues to show a steady to firm undertone on sustained demand for the commodity and small stocks. Prices are without seeming change at 9¾c. per pound for the Sarawak variety and 10c. for the Java on the spot.

STARCHES.—A steady undertone is displayed by the general market for starches, there being the same routine movement which has been in evidence for a number of weeks. Developments of importance are lacking, with prices unaltered. Quotations are as follows:—Globe pearl starch, in bags, $4.07; in barrels, $4.37; Buffalo corn starch, in bags, $4.25; in barrels, $4.55; Globe powdered starch, in bags, $4.25; in barrels, $4.55; Eagle finishing starch, in bags, $5.02; T. R. starch, No. 99 fluidity (hand packed), in barrels, $5.91; B starch, No. 99 fluidity (hand packed), in bags, $5.42; in barrels, $5.76. Above prices are per 100 pounds in carload lots, f. o. b. New York.

SUMAC.—Routine trading is reported in the market for ground sumac, with the Sicilian variety held in firm hands at $93@95 per ton on the spot. Domestic or Virginia ground sumac is more or less nominal at $70 per ton, this figure being named in some quarters without definite offer, it being stated that much difficulty is being experienced by growers in harvesting their crop and preparing it for the market. Stocks of the imported variety are not large, and the market retains its firm undertone. Sumac extract is receiving a continued good call from the usual trade sources and is firmly priced at 11@12c. per pound for the stainless Sicilian and 5¾@6½c. per pound for the 51-degree domestic liquid.

TIN CRYSTALS.—Only nominal prices continue to be heard in this market, though it is stated that there is a small movement of the commodity from producers to consumers under contract. Production is still largely curtailed by the absence of satisfactory supplies of the basic metal. Prices heard are 65@70c. per pound.

ZINC DUST.—Trading is rather active in this market and sales are reported to the regular consuming trade on the basis of 14@16c. per pound, according to quantity and seller. Stocks are plentiful, according to some in the trade, but the demand is preventing any accumulation of material to weaken the situation.

DYESTUFFS MAKERS

At Closed Conference in This City Pass Important Resolutions.

One of the most important meetings of the year of the American Dyestuffs Manufacturers' Association was held at the Biltmore Hotel on Thursday afternoon, and a number of resolutions which were stated to be of the greatest importance to the dyestuffs industry as a whole were adopted. Just what the resolutions were could not be obtained up to the going to press of the Reporter, details of the meeting as well as the resolutions being refused by officers of the association, as well as those who attended it.

It was learned, however, that the meeting, which some termed a conference, was attended by a number of members of the Dyes Institute and of the Dyestuffs Committee of the Chemical Alliance. The meeting was one of the largest that ever has been held by dyestuffs producers of the country, it being described by one person as "fully attended." Several men regarded as among the most prominent of those identified with the manufacture of coal-tar dyestuffs in this country were present at the meeting, among them being Morris R. Poucher, of the Du Pont company and president of the American Dyestuff Manufacturers' Association, and several of the directors of the latter body.

Overseas Briefs.

The carnauba wax export of Brazil during the first three months of 1918 amounted to only 930 metric tons, showing a marked decrease.

Zinc, cement and glass works in Poland are suffering serious depression on account of the war. The glass industry has been one of the most important, but most of these works have been stopped on account of the war. Only a few of the 35 plants are running, which before the war turned out glass worth $3,000,000 a year.

New cement works are to be built, largely with American capital, near Kjopsnes, in Tysfjorden, Norway, according to reports from Commercial Agent Norman L. Anderson. At the head of the enterprise are some of the best known business men in northern Norway. The capacity of the factory is estimated at 300,000 barrels of cement per year, and the capital stock is 4,000,000 crowns.

Progress made by Sweden in shaking off the monopoly of Germany on drugs and the entire chemical industry based on coal tar, as demonstrated at the Swedish industrial exhibition, has been carefully noted by agents of the United States Government who have been close students at the Goteborg fair to ideas on which the chemists of the United States might improve. One suggestion which has been taken under prompt consideration of the War Industries Board is a special war product cotton batting for bandages, made from 60 per cent. of wood pulp.

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Chemical Market

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 3, 4, 5, 6, 8, and table of contents on page 2.

Saturday Noon, Sept. 28, 1918.

Good feeling is reported in the markets for the so-called leaders of the general market for chemicals at New York. This is finding reflection to a good extent in the individual trading in some of the specialities, and as a whole the situation is a steady one. Prices are well maintained all around and several commodities have advanced to new levels for the week as a result of continued scarcity of supplies and good buying activity. The volume of business has been generally satisfactory throughout the list, though there are one or two exceptions as would be expected.

Among the items which are now at higher levels may be mentioned bleaching powder, producers of which are out of the market entirely, leaving second hands in control of the situation. The latter interests state that they have but the scantiest of supplies to meet a good and active demand, and they have consequently advanced their prices several notches higher, so to speak. Considerable of the inquiry in hand is for export account, it is stated. There is a good demand reported for caustic soda, that is, it is good as compared with previous weeks. Producers of this item also are out of the market generally for the balance of the year, and some are out of it for next year as well. Second hands having some small quantities for sale are not pressing their offers, and are holding for higher levels, which they predict will soon prevail. Soda ash is also showing a larger movement, and the recent sale of some 1,700 tons in the Middle West has been reported at a price higher than had been prevailing theretofore. Meanwhile both domestic and foreign demand at this point shows a continued good volume, and stocks are more tightly held in most quarters.

Copper sulphate, or blue vitriol, is in a good position, with a firm undertone showing at the recent advance. Producers say that the higher cost of producing this material, together with the steady call from consumers, has made the higher price absolutely inevitable, and there are some in the trade who state that even higher levels will prevail. Carbon tetrachloride is as scarce as ever, and producers are confining their efforts to meeting the government's wishes in the matter, making no sale without government sanction.

One of the features of the market is the pronounced scarcity of ammonia alum, for which second hands are asking exceptionally high and more generally nominal prices. Producers of the material have been virtually cleaned out of their supplies and only small quantities are available in other directions. The demand for this material is still large and high levels are predicted for the commodity unless some relief is obtained. The scarcity of the ammonia grade is finding reflection in the potash varieties which are receiving a demand from consumers who have been unable to get what they want in the ammonia kinds and have turned to the potash material for relief from pressing requirements. Prices have therefore advanced for the potash kind as well.

More complete reports as to the individual markets for the various chemicals on the list will be found below, together with summaries of markets at other points:—

CHEMICALS.

ACETATE OF LEAD.—There is a steady undertone to the trading in this market, with the movement of goods confined to routine operations. Prices are firmly upheld by the leading sellers, who state that stocks are just about sufficient for the current consuming inquiry. Prompt shipments are quoted on a basis of 15⅝@16⅛c. per pound for the brown broken, 17@17½c. for the white crystals, 16½@17c. for the white broken and 16¾@17¼c. per pound for the granular.

ACETATE OF LIME.—This market is unchanged from our last report, government-fixed prices still prevailing, and there being no goods offered by producers in the open spot market. The established price range is $4@4.05 per hundred pounds for prompt shipments at producers' works.

ALUM.—The previously noted stringency of supplies in this market continues to be a pronounced feature, while there is a relatively good call. Quantities of ammonia alum are virtually unobtainable at this writing and prices are showing a decided upward tendency. While one large producer continues to name the minimum figures of a week ago for the ammonia grades, it cannot be learned that there is any material available at the figures given, and the generally prevailing market levels for the ammonia grades are on a basis of 8@8¼c. per pound for the lump, 8½@8¾c. for the ground and 9@9¼c. for the powdered. Potash lump alum is higher also at 11½@12c. per pound, an increase of 1c. per pound on the inside. Demand for this grade of material is active.

ALUMINUM HYDRATE. — Firm prices are named in the market for aluminum hydrate, and there is little change noticeable in the general situation of the market. Leading producers are asking 11@12c. per pound for the heavy material and 17@18c. per pound for the light, prompt.

ANTIMONY OXIDE.—Important developments are absent in the trading in the market for antimony oxide, but the market retains its previously noted steadiness, with prices unchanged at 15@16c. per pound for prompt shipments. Needle antimony holds at 13½@14c. per pound, and the other qualities quoted in this market are ruling at the same price levels which have been quoted for several weeks past.

AQUA AMMONIA.—High-test aqua ammonia is still in active demand and poor supply, with producers still finding it rather difficult to accept new business from other than regular consumers holding priority privileges from the government. The established price for this grade is still in effect, being 8½c. per pound for carboys in car lots and up to 10½c. for smaller quantities. The 16-degree water ammonia is fixed in price at 6@8c. per pound and the 20-degree at 7@9c., depending upon quantity.

ARSENIC.—There has been rather good activity noted in this market within the week, and sales of the white material in small lots have been reported around 10½c. per pound. The range of prices as set by the government still prevails, with a maximum of 11c. per pound for small quantities and 9¼c. per pound for carloads. Red arsenic continues to be very scarce and prices are kept firm at 45@55c. per pound.

BICARBONATE OF SODA.—Producers are still reporting themselves as in a sold-up position and not well placed for the acceptance of new business for prompt shipment. Second hands have little to offer, but are asking slightly lower figures for their stocks owing to a slackening in the demand due probably to the high figures which recently prevailed. Resale lots are named by dealers at 3@3½c. per pound, while there was a car of the material offered during the week at 3.30c. per pound, the goods being enroute. The undertone of the market continues to show underlying strength on scarcity of stocks.

BLEACHING POWDER. — Second hands holding small quantities of bleaching powder are asking higher prices for their comparatively limited offers, naming 5½@6c. per pound for spot goods in large drums. They are asking the inside price for contracts over next year in some instances, while others ask 5c. per pound, refusing to shade the figure. Producers are out of the situation entirely and the spot market is practically confined to second hands. Demand for the material is active. Small export drums are named as high as 8c. per pound in some directions.

BLUE VITRIOL.—See market report on Copper Sulphate.

BRIMSTONE.—There is nothing in the way of new developments to report in this market. Movement of brimstone continues as steady as transportation conditions will allow, while the demand continues to be as large as ever. Prices are firm and unchanged. It is expected that prices for new business over next year will shortly be made public. Just what these will be cannot be stated at this time for various reasons.

CARBON TETRACHLORIDE. — No change has occurred in this market. Stocks are still exceedingly hard to obtain in the open market and producers are working in accordance with the government's desires. Sales are still made only after sanction of the government has been obtained and as high as 30c. per pound is nominally asked for relatively small quantities.

COPPER CARBONATE.—There is a firm undertone to the market for carbonate of copper and movement of the material is confined principally to regular customers owing to the fact that available supplies are restricted. Prices are repeated by leading sellers at 30@31c. per pound.

COPPER SULPHATE.—The market for copper sulphate, or blue vitriol, is firm at the recent advance to 9½@9¾c. per pound for the large 99 per cent. crystals, and 9⅜@9⅞c. per pound for the smaller 98@99 per cent. crystals for prompt shipment. These prices became effective on September 23 last, and were brought about by the in-

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creased cost of production based upon scarcity of raw materials and shortage of labor. There is a continued good demand for this material, it being somewhat larger than the usual call at this season of the year.

COPPERAS.—Demand for copperas, or green vitriol, is still of rather large proportions, while stocks are small and not being pressed for sale by holders. Prices are firmly established at the recently prevailing level of 2@2¼c. per pound for spot goods.

CAUSTIC POTASH.—Prices are unchanged in this market and the undertone holds steady. There is a fair demand reported by producers, who state that buying operations are, however, confined to relatively small parcels. Immediate shipments are named at 70@72c. per pound for the 88@92 per cent. material and 60@62c. per pound for the 70@75 per cent., these prices being at producers' works and according to quantity. It is probable that slight consessions could be obtained on future deliveries, though no open quotation is heard at this writing.

CAUSTIC SODA.—Demand for caustic soda is somewhat better than that reported a week ago and prices are, if anything, firmer, though they are not generally changed throughout the market. Some sellers are of the opinion that higher levels will prevail shortly, a minimum of 4½c. per pound being expected, though second hands are still offering at this writing to sell 76 per cent. solid caustic out of store on a basis of $4.20 per hundred pounds in some cases, though the generally accepted inside level is $4.25 per hundred or 4¼c. per pound. Producers continue to report that they are sold up for the balance of the year and in some cases practically for all of next year. Ground and powdered caustic soda are unchanged in price at 5@5½c. per pound, according to quantity, and the same is true of the flake variety which is in steady demand at 6@6½c. per pound, quantity governing. Next year's deliveries of the last-named are still held at 4¾@5c. per pound, amount governing the price.

CHLORATE OF POTASH.—Both domestic and foreign consumers are still showing a good interest in this market, and satisfactory business is reported booked by producers. Prices are being sustained by this condition, and first hands name 40@41c. per pound, according to quantity, for prompt shipments of both the powdered and crystal materials.

CHLORATE OF SODA.—Bona fide consumers are receiving supplies under contract at 18c. per pound. Second hands having small stocks to offer, are, however, asking from 24c. to 25c. per pound for spot goods. The market shows a firm undertone, with consumers showing a good interest in the contract offers.

CYANIDE OF SODA. — Second hands are offering limited quantities of cyanide of soda on the spot at 40@42c. per pound, and report that business is fair. One large producer continues to name 30c. per pound for prompt shipments. The market is steady.

FERRIC CHLORIDE.—No change of importance has occurred in the market for ferric chloride, with producers stating that current demand is sufficient to absorb their production in a steady manner. Prices are maintained for prompt shipments on the basis of 14@14½c. per pound for the 40-degree crystals and 6½@7c. per pound for the 40-degree liquid in carboys.

FLUORIDE OF SODA.——This market is rather dull and uninteresting. The undertone remains steady on a routine movement of goods. Prices are held at the recently noted level of 17@18c. per pound for spot or nearby goods.

NICKEL SALTS.—There is a fair demand for both the single and the double qualities of nickel salt. The price levels for both items have been maintained without change, and sellers are asking 16@17c. per pound for the single quality for immediate shipment, and 14@15c. per pound for the double.

NITRITE OF SODA.—Domestic producers of nitrite of soda are asking the repeated price of 27c. per pound for their product, while the imported variety is held by sellers at 28@30c per pound, according to quantity and quality. There is a fair demand for both kinds, but the market as a whole shows quietness.

SAL SODA.—Producers of sal soda continue to report difficulty in getting suitable supplies of satisfactory containers together with small stocks on hand. Demand for the article is good, and the market shows a decidedly firm undertone at recently named prices of $1.40@1.65 per hundred pounds, with the inside price named for barrels and the outside for kegs. Second hands have some small quantities to offer, and some are asking as high as 2c. per pound for their offers in barrels.

SALT CAKE.—Steadiness characterizes this market, and there is little that is new to report. Movement is wholly routine, and prices are maintained at $35@40 per ton for the ground for prompt shipment and $25@30 per ton for the unground.

SILICATE OF SODA.—Only small quantities of this material are to be found in the open market, and they are held by second hands, who are very firm in their prices of 2½c. per pound for the 40-degree and 7@8c. nominally for the 60-degree. In fact it is doubtful if any of the high test material is to be found in the open market at all. Producers are not offering at this time, being well sold up.

SODA ASH.—A sale of some 1,700 tons of light soda ash was recently reported closed in the middle West on the basis of 3.30c. per pound, and it is also stated that the local market shows a better feeling on the continuance of good buying interest. Prices are, however, without quotable change at 2½@2⅝c. per pound for the light 5 per cent. in single bags and 3¼@3½c. per pound for barrels. Dense ash is still scarce and quiet, with prices nominally repeated at 4c. per pound for barrels. Deliveries of the light ash, basis 48 per cent., are named by producers at 2¼c. per pound at works in single bags, and dense ash is 10 cents per hundred pounds higher, basis 48 per cent.

SULPHATE OF ALUMINA.—There is still a decidedly strong demand for sulphate of alumina, and the market retains its previously noted firm undertone, with prices more or less nominal for the iron free quality, owing to the scarcity of actual spot offerings. The price named is 3⅛@4c. per pound, while the commercial kind holds at 2@3½c. per pound, according to quantity and seller.

TIN OXIDE.—No change is reported in this market. Stocks are still small and difficult to locate, with prices more or less nominal at 90c.@$1 per pound, according to quantity and seller. There is a quiet demand.

ACIDS.

The market for acids, generally speaking, is a very firm affair and altogether show but little alteration from the previously noted position and good demand. The most important development during the week was the announcement of a new schedule of prices for sulphuric acid agreed upon between the Price Fixing Committee of the War Industries Board and the manufacturers of sulphuric and nitric acids, at Washington on Thursday. These new prices are lower than the level heretofore prevailing and are effective on September 30 and to remain in force until December 30 next. They are to be used as a basis for computation of prices for intermediate strengths of the acids named. It is also stated that no extra charge is to be allowed for mixing acids, the quotations for mixed acids to be based solely upon the acidity of the mixtures.

ACETIC.—This market is still in a very firm position, with some second hands still offering limited quantities of the glacial acetic at exceptionally high prices as compared with the figures which have been fixed by the government's agreement with the producers. Demand for the various grades of the acid is large.

BATTERY.—No change has occurred in this market and the previously noted nominal situation so far as offers of the acid in the open market are concerned continues.

CRESYLIC.—Domestic production of this acid is limited and absorbed to a large extent by its producers. Importations of the acid have stopped generally. This is causing the market to show but scanty stocks and a correspondingly firm undertone is developing. Prices are as yet unchanged at $1.15@1.20 per pound for the 95@97 per cent. acid and $1.25@1.35 per pound for the 97@99 per cent.

MURIATIC.—Only scanty amounts of this acid are available for spot transactions and producers are not in a position to favorably accept new business for immediate shipment. Prices as virtually fixed by the government are repeated at $1.90@2.15 per hundred pounds for the 18-degree in carboys, $2.05@2.30 for the 20-degree, and $2.55@2.80 for the 22-degree per hundred pounds.

NITRIC.—While producers of this acid and the Price Fixing Committee of the War Industries Board discussed the existing price schedule at Washington on Thursday, no change has been made and the present schedule will be continued until December 30 next. Demand for the acid continues unabatedly large and producers are still hard pressed to meet it.

OXALIC.—This market is the weak sister of the acid group, and continues to show unsteadiness, owing to pressure of competition and lack of substantial consuming interest. Spot goods are quoted at the lower basis of 40c. per pound in large quantities, while smaller amounts are sold up to 42c. per pound.

SULPHURIC.—The important development of the week in this market is the announcement of the Price Fixing Committee of the War Industries Board, after a consultation on Thursday, of a new price schedule effective on September 30, and to remain until December 30 next. The price of 60-degree baume acid has been reduced from $18 to $16 per ton for bulk in sellers' tanks at works, and the 66-degree from $28 to $25 per ton, likewise in bulk in

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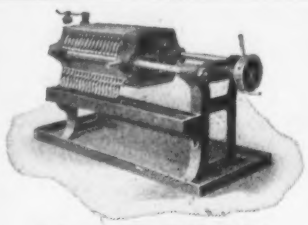

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sellers' tanks at works. All strengths of the acid below 60-degrees are to be computed on the basis of 60-degrees, and all strengths above 66-degrees on the basis of 66-degree acid. Oleum, 20 per cent., is fixed at $28 per ton, as compared with $32. An additional ½c. per pound is allowed for sulphuric in carboys in carloads, and ¾c. for less than carloads.

TARTARIC.—This market is without quotable change, either as to prices or conditions. Nominally spot goods are priced at 95c. per pound for the crystals and 93c. for the powdered in second hands.

JAPAN CHEMICAL MARKET.

Tokio, Aug. 19, 1918.

The chemical market in Japan has become duller again. However, with a fair improvement in demand acids' visible stock has become smaller and prices are well maintained. Acetic acid is quoted between 0.70 yen and 0.60 yen per pound, which figures are only fractional declines compared with last week. Chloric acid has declined 1 yen per 100 pounds to 41 yen. Sulphuric acid is again on the level of 3 yen per 100 pounds.

ARSENIC, WHITE—Is well stocked, and exporters are ready to meet foreign demand at 36 yen per 100 pounds.

PHOSPHORUS—Has weakened much since last report. Hunger riots started in Japan on account of the government failure to solve the food problem and business men's bold speculation at the expense of the nation generally has spread widely and affected many industrial towns. Particularly Kobe, one of the biggest centers of the match industry, has suffered from destructive riots and fighting between rioters and soldiers. The match industry there is expected to have to wait several weeks for its recovery of operations. This has affected phosphorus. Both red and yellow phosphorus are quoted at 110 yen per 100 pounds. This is a decline of 5 yen in the case of red goods and of 15 yen in the case of yellow goods.

POTASSIUM CHLORATE—Is weakening further in Japan, and Japanese exporters are anxious to find buyers overseas, but owing to the reluctance of shipowners to spare space for this product their shipment to Australia, India, America and the Dutch East Indies and other points is becoming difficult. At home the rice riots at Kobe have caused match manufacturers to suspend their operations, and their demand for this product has become dead. The glut has accordingly become more serious. Last week this product was still quoted at 56 yen to 58 yen, but now it is easily obtainable at 52 yen per 100 pounds. Other potashes have also become weaker.

BICHROMATE OF POTASH—Is quoted at 80 yen per 100 pounds, which is a decline of 3 yen from last week. In sympathy with potassium chlorate potash carbonate is declining; 90 per cent. goods are now quoted at 48 sen per pound, being a decline of 2 sen from last week.

POTASH PERMANGANATE—Is 30 sen cheaper than last week, being quoted at 4 yen per pound.

SULPHATE OF COPPER—Has declined, partly owing to the dull condition of demand and partly on account of the plentiful supply. The increasing cost of copper is not a consideration in this market. Its price is 27.50 yen per picul, a decline of 0.50 yen from last week.

SULPHUR—Is more decidedly reviving on an increasing demand from Australia and India, but the visible supply is small. Recently the output in Japan has been curtailed a great deal by mine operators in view of the heavy decrease in foreign demand and the increasing cost of production. The present revival will eventually lead to the improvement in production, but for the present the shortage in supplies adds much to the strength of the line. The ruling price is 70 yen per ton, which is an increase of 15 yen per ton as compared with the lowest figure lately quoted.

The Japanese Mining Bureau reports regarding the output of sulphur in Japan that the output of sulphur decreased sharply during the first half of this year. The total was 34,810 French tons, against 50,933 French tons for the same time last year, the rate of the decrease coming up to 37 per cent. The decrease reached its climax in June this year when the monthly output was only 5,412 French tons, against 10,111 French tons for the same time last year, the rate of reduction amounting to 48 per cent.

(In reading this report the following values and weights will be found of assistance:—Koku, 4.765 gallons; picul, 133⅓ pounds; kwan, 8.2673 pounds; kin, 1.3227 pounds; yen (100 sen), $0.4984.)

RECENT INCORPORATIONS.

Delaware.

The Ranger Gas and Oil Co., Wilmington; drilling for petroleum and natural gas and market products of same; capital, $500,000.

Wirt Gasoline Co., Wilmington; to drill for natural gas and to extract therefrom gasoline, etc.; capital, $75,000.

The Empire Construction Co., Wilmington; the business of contracting and construction in all its branches; capital, $75,000.

Overland Oil Co.; capital, $500,000. Incorporators:—P. S. Degardis, Esther Tuttle, both of Duluth, Minn.; J. L. McMation, Superior, Wis.

Tacoma Gas and Fuel Co.; capital, $5,000,000. Incorporators:—C. L. Rimlinger, M. M. Clancy, F. A. Armstrong, Wilmington.

Southern Oil and Pipeline Co., Wilmington; to drill for, extract or otherwise produce petroleum, gas and mineral products; capital, $500,000.

Boston Kentucky Oil Co., Dover; to operate plants for the extraction of gasoline from natural gas; to operate refineries; capital, $250,000.

La France Oil Corp.; capital, $100,000. Incorporators:—M. L. Gatchell, L. A. Irvin and W. G. Steigler, of Wilmington.

Crescent Oil Corp., increase in capital stock from $250,000 to $1,250,000.

Kentucky.

Roberta Oil and Gas Co., Frenchburg; capital, $100,000. Incorporators:—V. K. Williams and J. R. Hicks.

Georgia-Kentucky Oil and Gas Co., Winchester; capital, $30,000. Incorporators:—J. R. Lawrence and others.

The Pool Oil Co., Lexington, Ky., with a capital stock of $50,000. Incorporators:—B. D. Berry, C. B. Mathis and E. E. Loomis.

The Colonial Oil Co., Lexington, Ky., increasing its capital from $25,000 to $100,000.

The Trinity Oil and Gas Co., Winchester, Ky., increasing its capital from $50,000 to $100,000.

The Old Dominion Oil Co., Fitchburg, Ky., increasing its capital from $500,000 to $750,000.

The Kentucky Oil and Development Co., Newport, Ky.; capital, $99,000. Incorporators:—M. R. Moran, S. D. Cooper and C. R. Meyers.

New York.

Lubrical Products Co., Buffalo; petroleum products; capital, $25,000. Incorporators:—O. L. and B. E. Neil, H. B. Clark, 1614 Delaware avenue, Buffalo.

Cool-ins Oil Co., Manhattan; petroleum and by-products; capital, $70,000. Incorporators:—J. Shulman, H. Kobler and H. Flock, of 415 West 128th street.

Spear of Fire Equipment Works, Brooklyn; chemicals; capital, $10,000. Incorporators:—F. H. Shomburg, W. Metkiff and J. B. Barstolvus, of 274 Cleveland street, Brooklyn.

Empire Economy Co., Syracuse; drugs, cements; capital, $150,000. Incorporators:—W. F. Whitbeck, L. Blenco and F. E. Whitbeck, of Syracuse.

Texas.

Texas Petroleum Co., Brownwood; capital, $400,000. Incorporators:—C. L. Robertson, president; Sam M. Parks, vice-president; M. E. Phillips, secretary-treasurer.

West Virginia.

Ring Oil Co., Charleston; capital, $25,000. Incorporators:—H. C. Young, R. L. Bird, T. S. Clark and others.

UNITED STATES PATENTS GRANTED.

Among latest patents issued are many which have a direct interest to readers of the Oil, Paint and Drug Reporter. Those of our readers who wish to obtain details of any of these patents can secure copy of the patent by addressing the Commissioner of Patents, Washington, D. C., and sending 5 cents for each patent desired.

1,276,643. PROCESS AND APPARATUS FOR MAKING CALCIUM ACETATE AND BY-PRODUCTS. Jacques Gendreau, Shanghai, China. Filed May 3, 1918. Serial No. 232,336.

1. A process which comprises continuously admitting wood distillate containing methyl alcohol, acetic acid and tarry matters less volatile than acetic acid, to the upper end of an inclined conduit, heating the said distillate by a heating fluid out of direct contact therewith to an extent sufficient to induce volatilization of at least the major portions of the said alcohol and acid, causing the vapor produced to traverse a counter-flowing current of an alkaline absorbent liquid, which is maintained in a heated condition, both by the vapors in contact therewith and undergoing absorption, and by the vapors in the vaporizing vessel which have not yet come into contact therewith, while causing said vapors undergoing absorption to be repeatedly bubbled through the said absorbent liquid, whereby the acid is very completely absorbed from said vapors, and whereby an alcohol which may be absorbed thereby is effectively driven out again into the flowing vapor current, drawing off the alcohol vapor and condensing the same, and separately drawing off the acetate solution and the tarry liquid, all in a continuous process substantially as and for the purposes hereinabove set forth.

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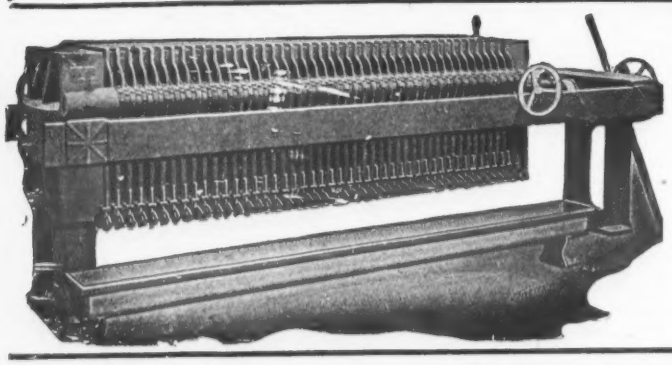

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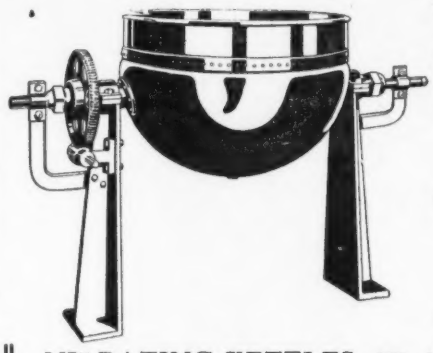

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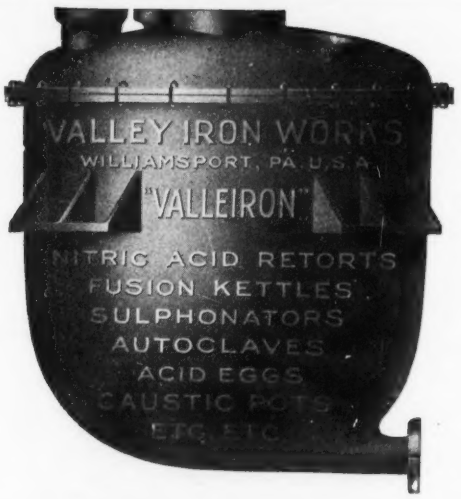

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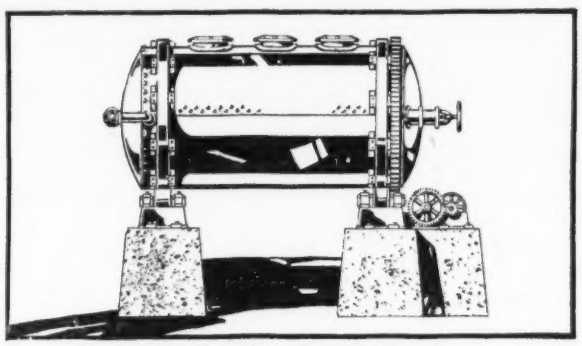

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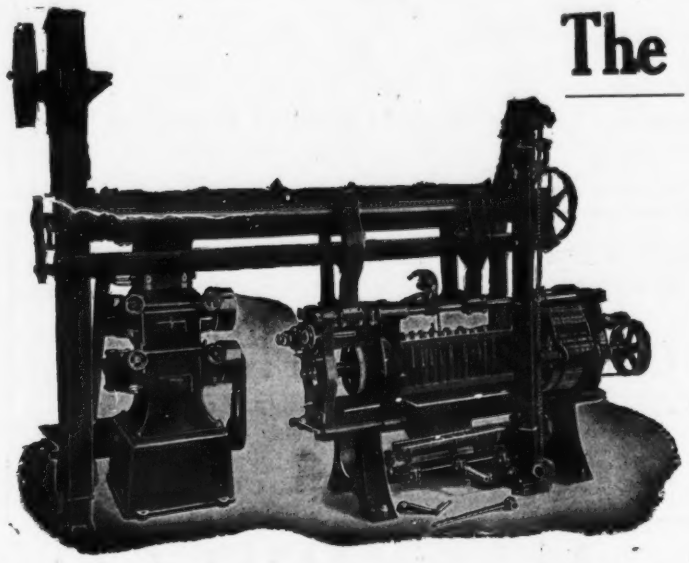

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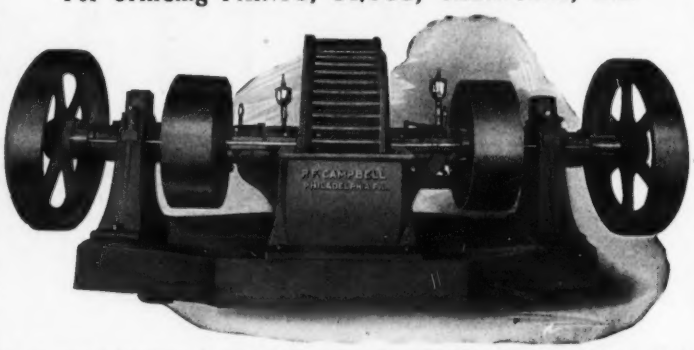

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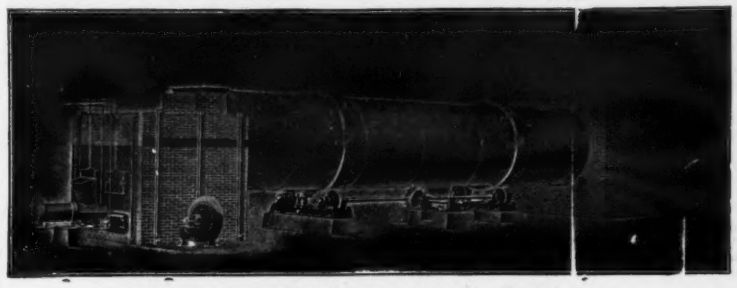

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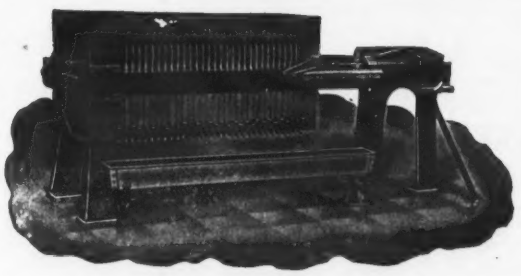

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Nitric Acid
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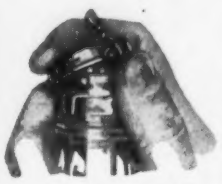
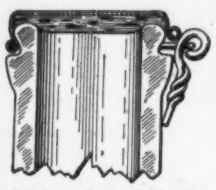
Outside view with lever down and bottle sealed.



Outside view with lever up and cap being removed.



Section through bottle and cap with lever down.

Section through bottle and cap with lever up.

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IMPORTS ENTERED FOR CONSUMPTION AT NEW YORK.

AGAR AGAR—50 bgs, 10,000 lbs, D Nagase & Co
ALBUMEN, EGG—89 cs, 17,800 lbs, American Express Co
30 cs, 6,000 lbs, K Nonaka & Co
100 cs, 20,000 lbs, French Kreme Co
ANILINE COLORS—14 bbls, 4,200 lbs, Geigy Co, Inc
ANTIMONY, REGULUS—2,000 cs, 450,000 lbs, Frost & Crandill, Inc
250 cs, 56,250 lbs, Fearon, Brown & Co
750 cs, 168,750 lbs, Mitsui & Co
500 cs, 112,500 lbs, Suzuki & Co
1,800 cs, 405,000 lbs, Arnhold, Karberg & Co
ASPHALTUM—Bulk, 550 tons, N J Maurer
BEANS—2,000 bgs, 400,000 lbs, Iwai & Co
CHIMAGO—690 bgs, 138,000 lbs, Suzuki & Co
CHUKUKU—239 bgs, 67,800 lbs, D Nagase & Co
DAIFUKU—1,183 bgs, 236,600 lbs, D Nagase & Co
500 bgs, 100,000 lbs, Mitsui & Co
KINTOKI—2,000 bgs, 400,000 lbs, Mitsui & Co
KOTENASHI—740 bgs, 148,000 lbs, W R Grace & Co
KUMAKIOTO—380 bgs, 76,000 lbs, W R Grace & Co
MUROINGEN—393 bgs, 78,600 lbs, D Nagase & Co
NAGAUZURA—300 bgs, 100,000 lbs, S B Gross Corp
2,000 bgs, 400,000 lbs, Mitsui & Co
1,000 bgs, 200,000 lbs, Meijo Trading Co
TONKA—8 cks, American Trading Co
VANILLA—1 cs, 125 lbs, A D Straus & Co
66 cs, 8,250 lbs, J N Limbert & Co
BERRIES, JUNIPER—85 bgs, 10,625 lbs, A Stallmann & Co
BRISTLES—30 cs, 3,900 lbs, Brown Bros
55 cs, 7,315 lbs, American Express Co
6 cs, 798 lbs, F H Cone
21 cs, 2,793 lbs, I Sekine & Co
150 cs, 19,950 lbs, Dowler, Forbes & Co
64 cs, 8,512 lbs, Arnhold, Karberg & Co
10 cs, 1,330 lbs, Huesmann & Co
50 cs, 6,650 lbs, Frank Frost, Inc
10 cs, 1,330 lbs, K Nonaka & Co
100 cs, 13,300 lbs, Mendelson & Co
10 cs, 1,330 lbs, Oliver & Co
31 cs, 4,123 lbs, A Norden & Co
200 cs, 26,600 lbs, Dowler, Forbes & Co
32 cs, 4,256 lbs, Equitable Trust Co
65 cs, 7,315 lbs, W Schall & Co
132 cs, 17,556 lbs, Ayres, Bridges & Co
221 cs, 29,393 lbs, S M Brachman & Co
CAMPHOR, CRUDE—100 cs, 10,000 lbs, Macdoweli Chow Corp
REFINED—50 cs, 5,000 lbs, Lazzara, Hamberg & Co
SLABS—200 cs, 20,000 lbs, D Nagase & Co
CASSIA—300 bls, 24,000 lbs, Wm Tappenbeck
1,400 cs, 92,400 lbs, Karanjia & Co
FISTULA—21 bgs, 2,100 lbs, Colonial Bank
CASEIN—416 bgs, 91,520 lbs, Casein Mfg Co
CHEMICAL PREPARATIONS—2 cs, Pitt & Scott
2 cs, Stanley, Jordan & Co
11 cs, Hoffmann-La Roche Chem Works
2 cs, R J Gates
CHILLIES—70 bgs, 5,600 lbs, Old & Wallace
56 bgs, 4,480 lbs, D Nagase & Co
100 bgs, 8,000 lbs, Maxum Hershey Seed Co
CLOVES—3 bgs, 300 lbs, Colonial Bank
COCOANUT—161 bgs, 24,150 lbs, Dunham Mfg Co
452 bgs, 67,800 lbs, Far East Mfg Co
908 bgs, 136,200 lbs, F W Bussing & Co
500 bgs, 75,000 lbs, Franklin Baker & Co
COLORS—1 cs, B F Drakenfeld & Co
CRUCIBLES—443 pkgs, Takata & Co
DRUGS—1 cs, Benzol Trading Co
DYEWOOD—3 bgs, 300 lbs, K H Butler & Co
EARTH, SIENNA—69 cks, 62,100 lbs, J W Coulston & Co
EUPHORBIA PILALIFERA—16 bls, 3,200 lbs, J Caruana
42 bls, 8,400 lbs, F W Mead & Co
FLOWERS, BORAGE—3 bls, 600 lbs, J L Hopkins & Co
PYRETHRUM—80 bls, 16,000 lbs, D Nagase & Co
50 bls, 10,000 lbs, C W Leavitt & Co
SAFFRON—2 cs, 200 lbs, McKesson & Robbins
2 cs, 200 lbs, A Stallmann & Co
GALL NUTS—144 cs, 36,000 lbs, Arnhold, Karberg & Co
346 cs, 86,500 lbs, Frost & Cundill, Inc
74 cs, 18,500 lbs, Busk & Daniels
200 cs, 50,000 lbs, Karanjia & Co
240 cs, 60,000 lbs, Dodwell & Co
50 cs, 12,500 lbs, Mitsui & Co
25 cs, 6,250 lbs, Balfour, Williamson & Co
500 cs, 125,000 lbs, National Aniline & Chem Co
GINGER—85 bgs, 12,750 lbs, D Nagase & Co
GLASS, WATER—7 cs, W A Henderson & Co
GUM, KARAYA—83 bgs, 12,450 lbs, F W Mead & Co
KATHIRA—46 bgs, 6,900 lbs, J Caruana
39 pkgs, 4,875 lbs, J Caruana
SHIRAZ—60 bgs, 9,000 lbs, Jacques Wolff & Co
25 bgs, 3,750 lbs, F W Mead & Co
RESIN—1 cs, Rockhill & Vietor
HIRATHIOL—120 cs, 13,200 lbs, Takamine Laboratory, Inc
HORSE HAIR—20 bls, 10,000 lbs, Arnhold, Karberg & Co
6 cs, 798 lbs, Mitsui & Co
TAILS—7 cs, 931 lbs, Olivier & Co
ICHTHYOLATE—50 cs, 5,500 lbs, C L Huisking
INDIGO—120 cks, 36,000 lbs, A Klipstein & Co
8 chests, 1,200 lbs, Geigy Co, Inc
IODIDE, RESUBLIMED—40 cs, 4,400 lbs, Suzuki & Co
LEAVES, COCA—105 bls, 13,125 lbs, Takamine Laboratory, Inc
COLTSFOOT—3 bls, 600 lbs, J L Hopkins & Co
ORIGANUM—34 bls, 6,800 lbs, A Stallmann & Co
LEECHES—2 cs, Midwood Chem Co
LIGNUM VITÆ—5,550 pcs, J Burns & Co
MACE—100 bgs, 12,500 lbs, Mercantile Bank of America
LOOFAHS—5 bls, 500 lbs, Itoh & Co
35 bls, 3,500 lbs, American Sponge & Chamois Co
MINERAL WATER—350 cs, H E Gourd
25 cs, Perry, Ryer & Co
NUT KOLA—30 bgs, 6,000 lbs, Gillespie Bros & Co
2 bbls, 600 lbs Gillespie Bros & Co
NUTMEGS—55 bgs, 6,875 lbs, Colonial Bank
27 bgs, 3,375 lbs, Royal Bank of Canada
7 bgs, 875 lbs, Gillespie Bros & Co
25 bbls, 4,875 lbs, Gillespie Bros & Co
NUX VOMICA—6,000 pockets, 330,000 lbs, McKesson & Robbins
180 bgs, 87,800 lbs, Winter, Sons & Co
320 pockets, 17,600 lbs, F W Mead & Co
OIL, CHINA WOOD—100 bbls, 5,000 gls, Karanjia & Co
114 cks, 5,700 gls, Olivier & Co
CODLIVER—50 bbls, 2,500 gls, A Stallmann & Co
COCOANUT—Bulk, 770,000 lbs, Nucoa Butter Co
ESSENTIAL—8 cs, A H Smith & Co
2 cs, C B Richard & Co
1 cs, Pitt & Scott
40 cs, Rockhill & Vietor
1 cs, Tice & Lynch
9 cs, T D Downing & Co
4 cs, E Fougera & Co
3 cs, Ungerer & Co
16 cs, F R Arnold & Co
2 cs, Dodge & Olcott Co
10 cs, A H Smith & Co
4 cs, Thomas Meadows & Co
ORANGE PEEL—20 bgs, 3,000 lbs, J L Hopkins & Co
ORE, TUNGSTEN—292 cs, 43,800 lbs, H J Greutert & Co
230 bgs, 34,500 lbs, H J Greutert & Co
166 cs, 24,900 lbs, Mogi & Co
32 cs, 4,800 lbs, Taisho Trading Co
700 bgs, 87,500 lbs, Hagemeyer Trading Co
WOLFRAM—3,750 lbs, H J Greutert & Co
60 bgs, 9,000 lbs, D Nagase & Co
80 cs, 12,000 lbs, D Nagase & Co
756 bgs, 113,400 lbs, Mitsui & Co
336 bgs, 50,400 lbs, Karanjia & Co
540 bgs, 81,00 0lbs, American Iron & Steel Institute
PEPPER, BLACK—1,358 bgs, 203,700 lbs, Winter, Sons & Co
400 bgs, 60,000 lbs, J W Phyfe & Co
1,369 bgs, 205,350 lbs, Bolus & Co
200 bgs, 30,000 lbs, M Arachtingi
600 bgs, 90,000 lbs, Mercantile Bank of America
400 bgs, 60,000 lbs, F W Mead & Co
130 bgs, 19,500 lbs, E S Kuh & Valk Co
PLANTS, MEDICINAL—1 cs, Rockhill & Vietor
POTASH, CARBONATE—440 cs, 48,400 lbs, Suzuki & Co
210 cs, 23,100 lbs, H J Greutert & Co
107 cs, 11,770 lbs, Arnhold, Karberg & Co
IODIDE—10 cs, 1,100 lbs, D Nagase & Co
PERMANGANATE—12 cs, 1,320 lbs, D Nagase & Co
PRUSSIATE—40 cs, 4,400 lbs, C L Huisking
6 cs, 660 lbs, S Suzuki & Co
QUININE, SULPHATE—24 cs, 12,000 ozs, C L Huisking
RICE POWDER—7 cs, A H Smith & Co
ROOTS, ALTHEA—8 bls, 1,600 lbs, J L Hopkins & Co
BURDOCK—178 bgs, 35,600 lbs, Yokohama Nursery
DANDELION—20 bgs, 4,00 lbs, Yokohama Nursery
LICORICE—167 bls, 58,450 lbs, A Stallmann & Co
190 bls, 66,500 lbs, J L Hopkins & Co
ORRIS—63 bgs, 12,600 lbs, P E Anderson & Co
SCOPOLA—60 bls, 12,000 lbs, McKay & Co
SEEDS, CORIANDER—192 bgs, 19,200 lbs, M Arachtingi
300 bgs, 30,000 lbs, Mercantile Bank of America
FENNEL—200 bgs, 26,125 lbs, M Arachtingi
SESAME—553 bgs, 82,950 lbs, D Nagase & Co
SODA, COMPOUND—50 bbls, 15,000 lbs, J P Marston & Co
TALC—7 cs, A H Smith & Co
TARTAR, CRUDE—1,070 bgs, 187,250 lbs, Tartar Chem Co
WAX, CARNAUBA—200 bgs, 30,000 lbs, Mitsui & Co
VEGETABLE—200 cs, 30,000 lbs, Abe Kobei & Co
20 cs, 3,000 lbs, Arnhold, Karberg & Co

Domestic Imports at New York.

ACIDS, CRESYLIC—125 bbls, 5,000 gls, Coastwise
OXALIC—259 bbls, 90,650 lbs, Stein, Hall & Co, P R R
ALCOHOL—80 bbls, 4,000 gls, P R R
WOOD—26 bbls, 1,300 gls, Coastwise
ANTIMONY, REGULUS—260 cs, 58,500 lbs, Coastwise
ASBESTOS—1 car, Coastwise
ASPHALTUM—285 bgs, 42,750 lbs, Coastwise
BARYTES—800 bgs, 200,000 lbs, Hammill & Gillespie, B & O R R
BRISTLES—408 cs, 54,264 lbs, Coastwise
45 bls, 22,500 lbs, Coastwise
CHARCOAL—300 bgs, 45,000 lbs, Coastwise
CLAY—420 bgs, 63,000 lbs, Coastwise
EARTH, INFUSORIAL—407 bgs, 61,050 lbs, Coastwise
EPSOM SALTS—200 bbls, 60,000 lbs, Archibald & Lewis Co, B & O R R
FERTILIZER—150 bgs, 22,500 lbs, Coastwise
GLYCERINE—35 dms, 36,050 lbs, D, L & W R R
GREASE—1 car, D, L & W R R
10 bbls, 5,000 cs, Coastwise
15 bbls, 7,500 lbs, P R R
GRAPHITE—554 bgs, 110,800 lbs, Coastwise
HAIR, HUMAN—25 bls, 12,500 lbs, Coastwise
LARD—224 tcs, D, L & W R R
100 tcs, W S R R
3 cars, P R R
1,405 cs, W S R R
100 tcs, National Packing Co, N Y C R R
94 tcs, United States Food Administration, D, L & W R R
200 tcs, Commission Belgium Relief, D, L & W R R
NUTMEG—213 bgs, 26,625 lbs, Coastwise
OIL, CASTOR—2 cars, D, L & W R R
COTTONSEED—2,000 cs, 20,000 gls, Coastwise
80 bbls, 4,000 gls, Coastwise
LARD—20 bbls, 1,000 gls, B & O R R
LUBRICATING—2 cars, S E Heyman & Co, P R R
3 cars, Vacuum Oil Co
15 bbls, 750 gls, P R R
5 cars, P R R
1 car, Clarendon Ref Co, P R R
1 car, G W Sheldon & Co, P R R
3 cars, Lunham & Moore
1 car, Bowring & Co
ROSIN—142 bbls, 7,100 gls, Coastwise
PLASTER—1,680 bgs, 252,000 lbs, Coastwise
ROSIN—8,719 bbls, 435,950 lbs, Coastwise
SIZE—120 bbls, 60,000 lbs, Coastwise
ROOTS—91 bgs, 13,650 lbs, Coastwise
SAGO FLOUR—1 car, Stein, Hall & Co, D, L & W R R
SODA ASH—1 car, Bush, Beach & Gent, D, L & W R R
1 car, D, L & W R R
BICARBONATE—200 bgs, 60,000 lbs, Church & Dwight Co, P R R
CAUSTIC—100 dms, 70,000 lbs, B & O R R
SPIRITS—31 bbls, 1,550 gls, P R R
1 car, Union Distg Co, D, L & W R R
STARCH—1 car, J M McNeice & Co, P R R
250 bgs, 37,500 lbs, B & O R R
TALC—320 bgs, 64,000 lbs, Coastwise
TALLOW—135 cks, 54,000 lbs, Coastwise
1,020 cks, 408,000 lbs, Coastwise
75 bbls, 30,000 lbs, Vandenhove & Co, B & O R R
TAPIOCA—136 bgs, 20,400 lbs, National Importing & Trading Co, N Y C R R
TAR—346 bbls, 173,000 lbs, Coastwise
TURPENTINE—1,533 bbls, 76,650 gls, Coastwise
WAX, PARAFFINE—3 cars, J C Francesconi Co, P R R
1 car, W B Gallagher & Co, P R R
274 bgs, 41,100 lbs, Coastwise
WOOD PULP—361 rolls, Coastwise

Imports at New York in Transit.

BRISTLES—100 cs, 13,300 lbs, Hartmann Bros, Boston
235 cs, 31,255 lbs, J & L Whiting & J J Adams, Boston
CHEMICAL PREPARATIONS—4 cs, Panama R R, Port au Prince
4 cs, American Express Co, Montreal
5 cs, American Express Co, Toronto
CAMPHOR, REFINED—200 cs, 20,000 lbs, American Camphor Ref Co, Boston
DRUGS—7 cs, Panama R R, Port au Prince
FLOWERS, PYRETHRUM—20 bls, 4,000 lbs, Alaire, Woodward & Co, Peoria
MEDICINAL PREPARATIONS—24 cs, Panama R R, Port au Prince
6 cs, New York & Cuba Mail S S Co, Havana
16 cs, American Express Co, Montreal
OIL, ESSENTIAL—2 cs, New York & Cuba Mail S S Co, Vera Cruz
10 cs, New York & Cuba Mail, S S Co, Havana
RICE POWDER—2 cs, New York & Cuba Mail S S Co, Havana
VARNISH—2 cs, New York & Cuba Mail S S Co, Havana
WATER, MINERAL—910 cs, R F Downing & Co, Philadelphia
150 cs, R F Downing & Co, Cleveland
150 cs, R F Downing & Co, Washington
100 cs, R F Downing & Co, Chicago

Warehoused in Bond at New York.

AGAR AGAR—50 bgs, 10,000 lbs, D Nagase & Co
ANTIMONY, REGULUS—270 cs, 60,750 lbs, Frost & Cundill, Inc
BRISTLES—150 cs, 19,950 lbs, F H Cone
50 cs, 6,650 lbs, Huesmann & Co
CASSIA—750 bls, 60,000 lbs, Wm Tappenbeck
OIL, ESSENTIAL—3 cs, B E Levy
12 cs, M Levy
37 cs, F M Prindler & Co
7 cs, E Utard
41 cs, Chas Baez

Imports at Seattle.

ANTIMONY, REGULUS—100 cs, 22,500 lbs, British Consul General
BRISTLES—13 cs, 1,729 lbs, Mechanics' & Metal National Bank
216 cs, 28,728 lbs, J T Steele & Co
COPRA—700 bgs 105,000 lbs, G Kawabara & Co
INSECT POWDER—27 bls, 5,400 lbs, Geo S Bush & Co
OIL, COCOANUT—700 cs, 7,000 gls, G Kawabara & Co
RAPESEED—140 cs, 1,400 gls, N Sashihara & Co
1,700 cs, 17,000 gls, Rogers, Brown & Co
POTASH, CARBONATE—10 cs, 1,100 lbs, N Y Ki
SEED, MUSTARD—100 bgs, 20,000 lbs, Yokonama Specie Bank
WAX, VEGETABLE—291 cs, 43,650 lbs, Irving National Bank

Imports at Seattle in Transit.

BRISTLES—264 cs, 35,112 lbs, Davies, Turner & Co, New York
110 cs, 14,630 lbs, Abe Kobei & Co, New York
15 cs, 1,995 lbs, F H Cone, New York
5 cs, 665 lbs, F W Von Stade, New York
120 cs, 15,960 lbs, Huesmann & Co, New York
55 cs, 7,315 lbs, J. C. Pushee & Sons, Boston
10 cs, 1,330 lbs, Mendelson & Co, New York
10 cs, 1,330 lbs, American Hair and Bristle Co, New York
5 cs, 665 lbs, Frank Frost, Inc, New York
20 cs, 2,660 lbs, A Norden & Co, New York
CASSIA—500 bls, 40,000 lbs, Frame & Co, New York
50 bls, 4,000 lbs, Wm Tappenbeck, New York
FLAXSEED—4,891 bgs, 10,760 bushels, Mitsui & Co, New York
GUM, COPAL—100 bgs, 15,000 lbs, S Winterbourne & Co, New York
LEAVES, HYASCIAMUS—13 bls, 1,600 lbs, Norwich Pharm Co, Norwich
MENTHOL CRYSTALS—50 cs, 3,000 lbs, H R Lathrop & Co, New York
50 cs, 3,000 lbs, Rockhill & Vietor, New York
20 cs, 1,200 lbs, W M H Luden, Reading
OIL, COCOANUT—2,500 cs, 25,000 gls, Marden, Orth & Hastings, New York
PEANUT—1,000 cs, 10,000 gls, R Garber, Chicago
RAPESEED—1,500 cs, 15,000 gls, Rockhill & Vietor, New York
SHIRASHIMA—200 cs, 2,000 gls, Vacuum Oil Co, New York
SOYA BEAN—800 cs, 8,000 gls, Mitsui & Co, New York
2,000 cs, 20,000 gls, D Nagase & Co, New York
3,000 cs, 30,000 gls, Suzuki & Co, New York
ORE, WOLFRAM—672 bgs, 100,800 lbs, Karanjia & Co, New York
POTASH, CARBONATE—20 cs, 2,200 lbs, C L Huisking, New York
40 cs, 4,400 lbs, Sumitomo Bank Ltd, New York
SEEDS, AJAWAN—2,024 bgs, 303,600 lbs, Mitsui & Co, New York
SHELLAC—992 bgs, 162,688 lbs, Mitsui & Co, New York
3,147 bgs, 516,108 lbs, Rogers & Pyatt Shellac Co, New York
GARNET LAC—100 bgs, 16,400 lbs, H W Peabody & Co, New York

Imports at Tacoma in Transit.

ANTIMONY, CRUDE—1,750 cs, 393,750 lbs, Wah Chang Trading Corp, New York
REGULUS—3,250 cs, 731,250 lbs, Wah Chang Trading Corp, New York
CLYCERITE—137 dms, British-American Tobacco Co, Ltd, Petersburg
OIL, CHINA WOOD—2,000 bbls, 100,000 gls, L C Gillespie & Sons, New York
330 cks, 16,500 gls, Paterson, Boardman & Knapp, New York
1,239 cks, 61,950 gls, A Klipstein & Co, New York
480 cks, 24,000 gls, O Jelstrup, San Francisco
300 cks, 15,000 gls East Asiatic Agency, New York
575 cks, 28,750 gls, S L Jones & Co, San Francisco
RAPESEED—5,000 cs, 50,000 gls, N B Cook Oil Co, New York
SESAME—90 bbls, 4,500 gls, S L Jones & Co, San Francisco

IMPORTS OF FOREIGN MERCHANDISE FOR JULY, 1918.

Buffalo, N. Y.

ACIDS—Canada, 127,786 lbs, $1,105
ARSENIC, CANADA—47,522 lbs, $2,376
ASBESTOS, UNMFD—Canada, 1,424 tons, $109,015
BARYTA—Canada, $2,614
CALCIUM—Canada, 7,771,944 lbs, $290,086
CHROMIC ORE—Canada, 1,595 tons, $34,349
COAL TAR, CRUDE—Canada, 896 bbls, $1,231
COBALT AND ZAFFER—Canada, 2,000 lbs, $860
CORUNDUM ORE—Canada, 33 tons, $1,828
FERTILIZER—Canada, 523 tons, $24,385
BONES AND HOOFS—Canada, 135,881 lbs, $3,002
BONE DUST—Canada, 237 tons, $10,615
FLAXSEED—Canada, 80,620 bush, $302,325; Argentina, 102,782 bush, $275,700. Total, 183,402 bush, $578,025
FLUORSPAR—Canada, 105 tons, $2,949
GREASE—Canada, 461,955 lbs, $19,919.
GUM—Canada, 60 lbs, $50
ARABIC—Canada, 25 lbs, $10
HORSE HAIR—Canada, $220
LIME, CHLORIDE—Canada, 25 lbs, $4
NITROGEN—Canada, 3,551 tons, $186,393
MAGNESITE, NOT PURIFIED—Canada, 194 tons, $8,198
MICA, UNMFD—Canada, 100 lbs, $65
NAPHTHALINE—Canada, 60,531 lbs, $2,270
OIL, CREOSOTE—Canada, 71,502 gls, $4,950
ESSENTIAL—Canada, $550
FUSEL—Canada, 207,806 lbs, $54,874
LEMON—Canada, 10 lbs, $160
PARAFFINE AND REF MINERAL—Canada, 71,003 gls, $7,606
PLASTER ROCK OR GYPSUM—Canada, 25 tons, $210
PLUMBAGO—Canada, 131 tons, $9,585
SULPHATE, BLEACHED—Canada, 22 tons, $2,118
UNBLEACHED—Canada, 434 tons, $33,500
SULPHITE, BLEACHED—Canada, 144 tons, $12,709
UNBLEACHED—Canada, 629 tons, $49,417
SULPHUR ORE—Canada, 3,070 tons, $10,743
TALCUM—Canada, 490,000 lbs, $3,614
TALLOW—Canada, 25 lbs, $3
WAX, BEES'—Canada, 50 lbs, $21
WOODPULP, GROUND—Canada, 1,273 tons, $45,378
PEELED—Canada, 1,955 c, $20,725
ROSSED—Canada, 410 c, $4,408
ROUGH—Canada, 426 c, $4,212

Cleveland, Ohio.

ACIDS—Canada, 500,110 lbs, $1,886
ASBESTOS—Canada, 295 tons, $5,714
BENZOL—Canada, 56,904 lbs, $3,038
BONE DUST—Canada, 80 tons, $2,030
CAPSICUM, GROUND—Japan, 40,000 lbs, $1,923
UNGROUND—Singapore, 33,000 lbs, $8,290
COAL TAR, CRUDE—Canada, 16 bbls, $72
GLUE—England, 390 lbs, $47
MAGNESITE NOT PURIFIED—Canada, 1,808 tons, $88,107
MEDICINAL COMPOUND—France, 4,250 lbs, $2,264
OTHER—England, $126
NAPHTHALENE—Canada, 56,700 lbs, $1,827
PAINT—Canada, $35
PLUMBAGO—Canada, 182 tons, $10,290
ROOT, GINGER—Japan, 30,000 lbs, $2,237
SULPHATE, UNBLEACHED—Canada, 53 tons, $5,427
SULPHITE, UNBLEACHED—Canada, 370 tons, $19,037
SULPHUR ORE—Canada, 19,862 tons, $75,367
WAX, MINERAL—Canada, 27,952 lbs, $2,236
WOODPULP, ROUGH—Canada, 1,800 c, $19,800
ROSSED—Canada, 3,266 c, $35,926

Detroit, Mich.

ACIDS—Canada, 1,915,540 lbs, $133,919
ALKALIES—France, 44 lbs $624
AMMONIA, SULPHATE—Canada, 188 tons, $30,638
ARSENIC—Canada, 125,653 lbs, $11,309
ASBESTOS, UNMFD—Canada, 3,658 tons, $127,911
BONES AND HOOFS—Canada, 61,600 lbs, $925
CALCIUM—Canada, 192,000 lbs, $7,680
CYANAMID—Canada, 401 tons, $15,691
CHROMIC ORE—Canada, 224 tons, $5,817
CLAY—England, 141 tons, $2,278
COLOR OR DYES—Switzerland, 276 lbs, $469
DRUGS—Canada, $80
FERTILIZER—Canada, 64 tons, $1,411
GREASE—Canada, 64,200 lbs, $3,210
MAGNESITE—Canada, 70 tons, $3,494
MICA, CUT—Canada, $1,575
MOSS—Canada, 40,000 lbs, $550
OIL, CREOSOTE—Canada, 7,070 gls, $771
PAINT—Canada, $168
PLUMBAGO—Canada, 22 tons, $1,838; Mexico, 1,085 tons, $25,874. Total, 1,084 tons, $27,412

J. L. & D. S. RIKER, Inc.

19 Cedar Street, New York

IMPORTERS' *and* MANUFACTURERS' AGENTS

Sole Agents for the United States and Canada of

The United Alkali Company, Limited of Great Britain

for the sale of their various brands of

BLEACHING POWDER

Sole Agents for the

Niagara Alkali Co., Niagara Falls, N. Y.

for the sale of their

BLEACHING POWDER *and* CAUSTIC SODA

PLASTER ROCK, GROUND—Canada, 92 tons, $1,135
SULPHATE, UNBLEACHED—Canada, 220 tons, $20,557
SULPHITE, BLEACHED—Canada, 10,592 tons, $784,060
UNBLEACHED—Canada, 133 tons, $13,300
TAR AND PITCH—Canada, 117 bbls, $157
TALCUM—Canada, 286,000 lbs, $2,817
WAX, BEES'—Canada, 3,562 lbs, $1,583
WOODPULP, ROUGH—Canada, 12,172 cd, $108,290

Milwaukee, Wis.

CEMENT—Canada, $385
NAPHTHALENE—Canada, 59,488 lbs, $2,008
OIL, OLIVE—France, 560 gls, $963
WOODPULP, GROUND—1,256 tons, $37,972

New Orleans, La.

BALSAM—Honduras, 2,932 lbs, $3 958
EARTH, FULLER'S—England, 516 tons, $7,881
MANGANESE ORE—England, 500 tons, $81,-087
OIL, MINERAL—Mexico, 16,207,800 gls, $166,-517
SODA, NITRATE—Chile, 36,658 tons, $2,037,500

Philadelphia, Pa.

ANTIMONY—Canada, 56,000 lbs, $2,240
BARK, CINCHONA—Dutch E I, 164,754 lbs, $33,872

San Antonio, Tex.

ANTIMONY ORE—Mexico, 52,436 lbs, $4,326
ARSENIC—Mexico, 90,010 lbs, $6,766
BONES—Mexico, 375,603 lbs, $2,781
FERTILIZER—Mexico, 58 tons, $506
GUANO—Mexico, 23 tons, $769
HORSE HAIR—Mexico, $994
OIL CAKE—Mexico, 162,038 lbs, $4,195
MINERAL—Mexico, 2,541,000 gls, $25,307
POTASH, NITRATE—Mexico, 37,036 lbs, $3,307
WAX, VEGETABLE — Mexico, 58,352 lbs, $22,781
ZINC ORE—Mexico, 122,018 lbs, $5,035

San Francisco, Cal.

ALBUMEN, EGG—China, 393,344 lbs, $63,427
ANTIMONY—China, 672,030 lbs, $67,203
ARGOLS—France, 55,829 lbs, $14,076
BARK, CINCHONA—Dutch East Indies, 10,000 oz, $5,880; Japan, 5,000 oz, $3,743; total, 15,000 oz, $9,623
BONES AND HOOFS—Mexico, 1,444 lbs, $361; Australia, 57,983 lbs, $2,422; total, 59,427 lbs, $2,783
BRISTLES—Hong Kong, 390 lbs, $855; Japan, 85 lbs, $394; total, 484 lbs, $1,249
CASSIA—China, 227,333 lbs, $8,217; Dutch East Indies, 616,188 lbs, $58,456; Hong Kong, 286,923 lbs, $22,346; total, 1,130,444 lbs, $89,019
CAPSICUM—Japan, 22,200 lbs, $1,674
CEMENT—Canada, $54
CLOVES—Hong Kong, 66 lbs, $21
STARCH—Japan, 200 lbs, $43
SULPHATE, UNBLEACHED—Canada, 189 tons, $10,268
SULPHITE, BLEACHED—Canada, 123 tons, $9,840
UNBLEACHED—Canada, 200 tons, $14,000
TALLOW—Australia, 517,387 lbs, $68,225; New Zealand, 1,962,102 lbs, $209,926; total, 2,479,489 lbs, $278,151
TUNGSTEN ORE—China, 386 tons, $353,517; Hong Kong, 49 tons, $47,957; total, 435 tons, $401,474
WAX, VEGETABLE—Japan, 30,980 lbs, $5,537

EXPORTS.

From Buffalo July, 1918.

ACIDS—Canada, $3,968
SULPHURIC—Canada, 1,678,502 lbs, $27,045
ANILINE DYES—Canada, $17,736
ASPHALTUM—Canada, 218 tons, $6,916
CALCIUM CARBIDE—Canada, 8,453 lbs, $550
COAL TAR—Canada, 1,343 bbls, $2,184
DIST—Canada, $76,420
COLORS, DRY—Canada, $23,914; Australia, $336; total, $24,250
DYES—Canada, $6,432
EGG YOLK—Canada, $175
FLAVORING EXTRACT—Canada, $13,379
FORMALDEHYDE—Canada, $2
GINSENG—Canada, $58
PAINT—Canada, $29,865
MIXED—Canada, 2,780 gls, $4,896; Hong Kong, 108 gls, $450; Australia, 1,710 gls, $5,361; total, 4,598 lbs, $10,707
PARAFFIN, REFINED—Canada, 1,150 lbs, $171
PERFUMERY—Canada, $1,671
PETROLEUM JELLY—Canada, $4,070
PLASTER—Canada, $34
POTASH—Canada, $800
RED LEAD—Canada, 10,499 lbs, $1,050
ROSIN—Canada, 249 bbls, $2,274
SODA, ASH—Canada, 67,500 lbs, $1,640
CAUSTIC—Canada, 255,604 lbs, $12,519
SAL—Canada, 138,120 lbs, $1,978
SALTS—Canada, $45,706
SILICATE—Canada, 753,799 lbs, $5,383
SOAP—Canada, 3,824 lbs, $504
TOILET—Canada, $1,113
STOCK—Canada, $23,310
SPONGES—Canada, 399 lbs, $817
STARCH—Canada, 410 lbs, $43
STEARINE FROM ANIMAL FAT—Canada, 3,200 lbs, $960
SULPHUR ORE—Canada, 256 tons, $9,461
TANNING EXTRACT—Canada, $21,857
TURPENTINE, TAR—Canada, 496 bbls, $3,424
SPIRITS—Canada, 2,456 gls, $1,417
VARNISH—Canada, 276 gls, $738
WAX, BEES'—Canada, $371
WHITE LEAD—Canada, 300 lbs, $36
ZINC, OXIDE—Canada, 206,682 lbs, $21,945

CREAM OF TARTAR TARTARIC ACID

GUARANTEED 99½-100 PER CENT. PURE

TARTAR CHEMICAL WORKS, 135 William Street, NEW YORK

ROYAL BAKING POWDER COMPANY

BONES AND HOOFS—Uruguay, 530,000 lbs, $19,790
CAPSICUM GROUND—Spain, 5,500 lbs, $1,339
CHALK, CRUDE—England, 2,100 tons, $2,228
CLAY, CHINA—England, 5,252 tons, $36,792
COLORS AND DYES—Switzerland, 9,954 lbs, $14,315
CORK WASTE—Portugal, 593,989 lbs, $5,243
CRESOL—England, 43,463 lbs, $3,397
DYEWOOD—Haiti, 948 tons, $20,205
EARTH, FULLER'S—England, 602 tons, $4,242
GUM—Canada, 44,540 lbs, $10,517
HAIR, HORSE—England, $9,166; Canada, $3,214. Total, $12,380
HUMAN, CLEANED—England, $1,392
LIME, CITRATE—Italy, 112,847 lbs, $42,776
MANGANESE, FERRO—England, 1,185 tons, $205,459
ORE—Brazil, 6,500 tons, $254,122; Brit India, 800 tons, $3,893. Total, 7,300 tons, $258,015
OIL, ANIMAL—Canada, $9,840
MINERAL—Mexico, 73,708,000 gls, $263,327
OPIUM—England, 8,970 lbs, $165,987
PAINT—Canada, $1,277
PERFUMERY—France, $3
PLUMBAGO—Mexico, 39 tons, $1,560
ROOT, LICORICE—Greece, 1,010,244 lbs, $70,-234; Spain, 510,300 lbs, $38,265; China, 111,536 lbs, $8,100. Total, 1,632,080 lbs, $116,599
SOAP—England, 404 lbs, $44
SODA, NITRATE—Chile, 10,650 tons, $376,583
SULPHUR ORE—France, 500 tons, $7,500; Spain, 2,277 tons, $17,700. Total, 2,777 tons, $25,200

Providence, R. I.

CORUNDUM ORE—Scotland, 84 tons, $11,960
LOGWOOD OR DYEWOOD—Japan, 420 tons, $17,220
OIL, CRUDE—Mexico, 6,132,000 gls, $80,059
EARTH, FULLER'S—England, 100 tons, $1,738
GREASE—Japan, 67,201 lbs, $7,762; Australia, 764 lbs, $94; total, 67,965 lbs, $7,856
GAMBIER—Dutch East Indies, 323,160 lbs, $37,141
GUM—Straits Settlements, 291,200 lbs, $28,875; Dutch East Indies, 628,361 lbs, $54,658; New Zealand, 84,014 lbs, $6,482; total, 1,003,575 lbs, $90,015
HAIR, HUMAN, CLEANED—China, $469
NUTMEGS—Dutch East Indies, 144,553 lbs, $22,849
OIL CAKE—China, 217,990 lbs, $22,093; Japan, 189,020 lbs, $21,546; Philippine Islands, 1,092,836 lbs, $121,684; total, 1,499,846 lbs, $165,323
CHINESE NUT—China, 173,954 gls, $180,956; Hong Kong, 40,005 gls, $46,870; total, 213,959 gls, $227,826
COCOANUT—Dutch East Indies, 2,160,816 lbs, $259,533; British Oceania, 49,567 lbs, $9,559; Philippine Islands, 5,878,694 lbs, $925,934; total, 8,089,077 lbs, $1,195,026
ESSENTIAL—Dutch East Indies, $1,550; Hong Kong, $100; total, $1,650
EXPRESSED—China, $9,000; Japan, $2,452; total, $11,452
LINSEED—China, 603 gls, $727
PEANUT—China, 1,228 gls, $1,204; Dutch East Indies, 7,680 gls, $5,324; Hong Kong, 31,224 gls, $40,108; total, 40,132 gls, $46,636
RAPESEED—China, 15,150 gls, $15,248
PAINT—France, $2,346; China, $27; total, $2,373
PERFUMERY—France, $265; England, $77; Hong Kong, $8; Japan, $24; total, $374
PEPPER, UNGROUND—Straits Settlements, 139,560 lbs, $16,511; Dutch East Indies, 1,789,874 lbs, $262,683; total 1,930,434 lbs, $279,194
POTASH—Dutch East Indies, 24,000 lbs, $1,-343; Japan, 900 lbs, $195; total, 24,900 lbs, $1,538
SULPHATE—Japan, 12 tons, $2,763
ROOT, GINGER—Jamaica, 41,870 lbs, $5,762; Hong Kong, 28,533 lbs, $1,324; total, 70,403 lbs, $7,086
SODA, NITRATE—Chile, 7,146 tons, $296,189
GLASS, PLATE, UNSILVERED—Canada, 9,696 sq ft, $3,803
WINDOW—Canada, 6,057 bxs, $27,464
GLUE—Canada, 46,699 lbs, $8,706
GREASE, LURICATING—Canada, $16,497
LARD—Canada, 50 gls, $63
LIME, CHLORIDE—Canada, 274,584 lbs, $6,178
LOGWOOD EXTRACT—Canada, $5,806
OIL, COTTONSEED—Canada, 61,343 lbs, $10,737
FUEL—Canada, 223,419 gls, $13,786
GASOLINE—Canada, 112,084 gls, $25,125
ILLUMINATING—Canada, 22,851 gls, $6,644
LUBRICATING—Canada, 334,290 gls, $121,-821; Newfoundland, 10,000 gls, $3,600; total, 344,290 gls, $125,421
NAPHTHAS—Canada, 60,448 gls, $12,315
PEPPERMINT—Canada, 1,388 lbs, $4,386
VEGETABLE—Canada, $26,548
VOLATILE—Canada, $2,342
ORE, TUNGSTEN—Canada, 4,000 lbs, $9,600

Cleveland, Ohio.

CLAY, FIRE—Canada, 157 tons, $332
OIL, CRUDE—Canada, 5,484,614 gls, $302,556
FUEL—Canada, 1,389,209 gls, $118,083
GASOLINE—Canada, 8,146 gls, $1,873
ILLUMINATING—Canada, 7,075 gls, $707
LUBRICATING—Canada, 11,292 gls, $1,780
NAPHTHA—Canada, 14,100 gls, $2,608
SODA, ASH—Canada, 63,000 lbs, $549

Detroit, Mich.

ACID—Canada, $8,145
CARBOLIC—Canada, 306 lbs, $75
NITRIC—Canada, 7,585 lbs, $788
SULPHURIC—Canada, 5,546,868 lbs, $78,285
ANILINE COLORS—Canada, $634
ASPHALTUM—Canada, 568 tons, $13,345
BAUXITE—Canada, 2,087 tons, $160,618
COAL TAR—Canada, 4,534 bbls, $5,255
DIST—Canada, $28
COLORS, DRY—Canada, $9,939

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DYES—Canada, $866; Australia, $48; total, $914
EGG YOLK—Canada, $381
FORMALDEHYDE—Canada, $24
FLAVORING EXTRACT—Canada, $6,245
GLASS, PLATE, UNSILVERED—Canada, 4,931 sq ft, $1,519
WINDOW—Canada, 4,549 bxs, $20,141
GLUCOSE—Canada, 3,932 lbs, $247
GLUE—Canada, 58,154 lbs, $8,544
GREASE, LUBRICATING—Canada, $277
LARD—England, 7,206,536 lbs, $1,879,295; Newfoundland, 6,500 lbs, $1,700; total, 7,213,036 lbs, $1,880,995
COMPOUND—Canada, 354 lbs, $87
NEUTRAL—Newfoundland, 57,909 lbs, $15,490
LIME—Canada, 2,352 bbls, $2,290
CHLORIDE—Canada, 305 lbs, $18
OIL, ANIMAL—Canada, 360 gls, $755
COTTONSEED—Canada, 3,254,815 gls, $569,931
CRUDE—Canada, 10,807,427 gls, $639,875
FUEL—England, 7,156,004 gls, $389,907; Canada, 12,862,585 gls, $784,829; total, 20,018,589 gls, $1,124,736
GASOLINE—Canada, 313,163 gls, $66,175
ILLUMINATING—Canada, 28,123 gls, $2,643
LUBRICATING—Canada, 28,050 gls, $7,732
NAPHTHAS—Canada, 32,466 gls, $5,224
OLEO — England, 292,775 lbs, $70,266; Canada, 191,614 lbs, $50,828; total, 484,389 lbs, $121,094
PEPPERMINT—Canada, 1,660 lbs, $4,853
PARAFFIN—Canada, 1,364 gls, $1,064
VEGETABLE—Canada, $5,246
VOLATILE—Canada, $5,783
OLEO MARGARINE—Canada, 64,580 lbs, $18,250
PAINT—Canada, $13,106
MIXED—Canada, 3,160 gls, $4,359; Newfoundland, 5 gls, $18; total, 3,165 gls, $4,377
PARAFFIN, REFINED—Canada, 8,700 lbs, $741
PERFUMERIES—Canada, $8,891; Newfoundland, $28; China, $473; British India, $4,000; Straits Settlements, $445; Australia, $1,406; Philippine Islands, $663; total, $15,906
PETROLEUM JELLY—Canada, $268
POTASH—Canada, $14,296
CHLORATE—Canada, 1,680 lbs, $588
QUICKSILVER—Canada, 200 lbs, $390
RED LEAD—Canada, 72,676 lbs, $7,081
ROSIN—Canada, 9,777 bbls, $84,793
SOAP—Canada, 344,991 lbs, $40,959
STOCK—Canada, $65,814
TOILET—Canada, $1,586; Newfoundland, $2,313; China, $27; Australia, $2,115; Philippine Islands $28; total, $6,069
SODA, ASH—Canada, 3,727,325 lbs, $90,366
CAUSTIC—Canada, 240,669 lbs, $8,177
SAL—Canada, 338,800 lbs, $5,575
SALTS—Canada, $16,827
SILICATE—Canada, 1,187,636 lbs, $21,569
SPONGES—Canada, 203 lbs, $619
STARCH—Canada, 180,600 lbs, $7,338
STEARINE FROM ANIMAL FATS—Canada, 234,138 lbs, $42,887
VEGETABLE—Canada, 5,000 lbs, $1,112
SULPHUR ORE—Canada, 5,477 tons, $123,468
TANNING EXTRACT—Canada, $4,462
TURPENTINE, TAR—Canada, 11 bbls, $139
SPIRITS—Canada, 54,281 gls, $31,908
VARNISH—Canada, 1,440 gls, $1,494
WAX, BEES'—Canada, 1,097 lbs, $453
WHITE LEAD—Canada, 653 lbs, $63
ZINC, OXIDE—Canada, 95,374 lbs, $7,782

New Orleans, La.

ACID—Honduras, $584; Nicaragua, $17; Panama, $9; Mexico, $1,187; total, $1,797
CARBOLIC—Honduras, 43 lbs, $16
NITRIC—Honduras, 5 lbs, $2; Nicaragua, 102 lbs $12; total, 107 lbs, $14
SULPHURIC—Mexico, 45,087 lbs, $2,252
ALCOHOL, WOOD—British Honduras, 20 gls, $20
CALCIUM CARBIDE—British Honduras, 1,000 lbs, $53; Honduras, 14,700 lbs, $738; Nicaragua, 2,900 lbs $146; Mexico, 6,324 lbs, $568; total, 24,924 lbs, $1,505
COAL TAR—British Honduras, 2 bbls, $31; Costa Rica, 13 bbls, $116; Guatemala, 2 bbls, $73; Nicaragua, 2 bbls, $21; Mexico, 10 bbls, $111; total, 30 bbls, $352
COLORS, DRY—Honduras, $7; Mexico, $889; Colombia, $148; total, $1,044
COPPER SULPHATE—Honduras, 400 lbs, $60
COTTONSEED—Honduras, 1,000 lbs, $150
DYES—British Honduras, $13; Costa Rica, $82; Guatemala, $125; Honduras, $58; Nicaragua, $44; Panama, $8; Mexico, $3,376; Cuba, $1,068; total, $4,774
FLAVORING EXTRACT—British Honduras, $91; Honduras, $159; Nicaragua, $18; Panama, $104; Mexico, $433; Cuba, $437; total, $1,242
FORMALDEHYDE—Panama, $4
GLASS, PLATE, UNSILVERED—Guatemala, 2,192 sq ft, $1,954; Honduras, 49 sq ft, $48; Nicaragua 19 sq ft, $23; Mexico, 2,120 sq ft, $2,030; total, 4,380 sq ft, $4,055
WINDOW—Panama, 19 bxs, $132; Mexico, 51 bxs, $656; total, 70 bxs, $788
GLUE—British Honduras, 5 lbs, $2; Honduras, 166 lbs, $33; Mexico, 50 lbs, $19; Cuba, 19 lbs, $8; total, 240 lbs, $62
GLYCERINE—Honduras, 16 lbs, $15; Mexico, 50 lbs, $45; total, 66 lbs, $60
GREASE, LUBRICATING—British Honduras, $14; Honduras, $246; Nicaragua, $171; Panama, $150; Mexico, $1,267; Cuba, $1,011; Colombia, $73; total, $2,935
LARD—British Honduras, 2,145 lbs, $540; Honduras, 500 lbs, $150; Nicaragua, 400 lbs, $98; Panama, 14,742 lbs, $5,678; Mexico, 130,053 lbs, $30,381; Cuba, 504,740 lbs, $147,814; French West Indies, 100 lbs, $25; Peru, 2,600 lbs, $3,745
COMPOUND—British Honduras, 2,770 lbs, $680; Honduras, 4,674 lbs, $1,224; Nicaragua, 7,710 lbs, $1,841; Panama, 16,704 lbs, $5,123; Mexico, 70,996 lbs $18,112; Cuba, 261,499 lbs, $67,901; total, 364,358 lbs, $94,881
LIME—Honduras, 213 bbls, $400
CHLORIDE—Honduras, 50 lbs, $5
OIL, ANIMAL—Mexico, 42 gls, $50
CORN—Honduras, 13 lbs, $3
COTTONSEED—England, 6,460,300 lbs, $1,547,149; Honduras, 342 lbs, $97; Nicaragua, 9 lbs, $2; Mexico, 7,645 lbs, $1,977; Jamaica, 81,000 lbs, $17,167; Cuba, 406,702 lbs, $87,520; total, 6,955,998 lbs, $1,653,912
CRUDE—Mexico, 10,200 gls, $1,300
FUEL—France, 309,399 gls, $13,150; England, 729,029 gls, $34,285; Scotland, 157,970 gls, $7,108; Honduras, 500 gls, $44; Nicaragua, 3,880 gls, $446; total, 1,200,798 gls, $55,032
GASOLINE—British Honduras, 6,350 gls, $1,923; Guatemala, 1,500 gls, $630; Honduras, 11,473 gls, $2,667; Nicaragua, 42,869 gls, $10,352; French West Indies, 1,250 gls, $325; total, 63,442 gls, $15,897
ILLUMINATING—British Honduras, 45,091 gls, $9,815; Costa Rica, 13,350 gls, $2,408; Guatemala, 4,610 gls, $912; Honduras, 11,130 gls, $1,823; Nicaragua, 17,709 gls, $2,900; Panama, 63,100 gls, $13,714; Mexico, 650 gls, $708; Cuba, 2,610 gls, $122; total, 158,250 gls, $32,402
LUBRICATING—Italy, 96,993 gls, $49,457; British Honduras, 71 gls, $38; Honduras, 2,395 gls, $750; Nicaragua, 1,906 gls, $777; Mexico, 165 gls, $104; Colombia, 936 gls, $470; total, 102,466 gls, $51,596
LINSEED—British Honduras, 148 gls, $283; Guatemala, 12 gls, $18; Honduras, 537 gls, $794; Nicaragua, 236 gls, 403, Mexico, 1,835 gls, $3,758; Colombia, 250 gls, $408; Venezuela, 49 gls, $50; total, 3,007 gls, $5,714
NAPHTHAS—Honduras, 6,380 gls, $728
PARAFFINE—British Honduras, 758 gls, $327; Costa Rica, 100 gls, $51; Guatemala, 6 gls, $2; Honduras, 1,811 gls, $637; Panama, 15,369 gls, $5,379; Mexico, 8,520 gls, $6,128; Cuba, 7,018 gls, $3,363; total, 33,582 gls, $15,887
VEGETABLE—Honduras $9; Nicaragua, $7; Mexico, $30; total, $46
VOLATILE—British Honduras, $8; Honduras, $16; total, $24
OLEO MARGARINE—Honduras, 90 lbs, $28; Jamaica, 11,400 lbs, $3,160; Cuba, 1,980 lbs, $594; total, 13,470 lbs, $3,782
PAINT—British Honduras, $29; Costa Rica, $9; Honduras, $11,986; Nicaragua, $217; Panama, $250; Mexico, $930; Cuba, $1,740; Colombia, $177; Peru, $190; total, $5,528
MIXED—British Honduras, 204 gls, $266; Guatemala, 44 gls, $108; Honduras, 1,175 gls, $1,450; Nicaragua, 1,039 gls, $2,778; Mexico 101 gls, $177; Cuba, 115 gls, $331; Colombia, 74 gls, $78; total, 2,752 gls, $5,188
PARAFFINE, REFINED—Costa Rica, 6,000 lbs, $700; Mexico, 58,130 lbs, $7,724; total, 64,130 lbs, $8,424
UNREFINED—England, 426,183 lbs, $38,336
PERFUMERIES—British Honduras, $103; Guatemala, $127; Honduras, $1,750; Nicaragua, $360; Panama, $50; Mexico, $271; Jamaica, $76; Cuba, $297; Chile, $2,389; Peru, $415; total, $5,838
PETROLEUM JELLY—British Honduras, $52; Honduras, $276; Nicaragua, $2; total, $330
POTASH—Honduras, $20; Mexico, 9; total, $29
ROSIN—British Honduras, 2 bbls, $21; Costa Rica, 291 bbls, $3,130; Nicaragua, 136 bbls, $1,325; Chile 648 bbls, $8,250; Colombia, 71 bbls, $1,074; Peru, 143 bbls, $1,400; total, 1,291 bbls, $15,200
SODA, ASH—Costa Rica 7,500 lbs, $225; Honduras, 12,000 lbs, $320; Mexico, 16,851 lbs, $596; total, 36,351 lbs, $1,141
CAUSTIC—Guatemala, 6 lbs, $2; Honduras, 5,760 lbs, $431; Mexico, 10,600 lbs, $550; total, 16,366 lbs, $983
SAL—British Honduras, 1,139 lbs, $34; Honduras, 750 lbs, $15; Nicaragua, 375 lbs, $12; total, 2,264 lbs, $61
SALTS—British Honduras, $1; Costa Rica, $22; Guatemala, $7; Honduras, $14; Nicaragua, $14; Mexico, $987; Jamaica, $22; Venezuela, $40; total, $1,107
SILICATE—Cuba, 93,371 lbs, $754
SOAP—British Honduras, 76,237 lbs $6,572; Costa Rica, 2,338 lbs, $273; Guatemala, 5,000 lbs, $520; Honduras, 32,828 lbs, $3,411; Nicaragua, 26,639 lbs, $2,426; Panama, 1,650 lbs, $175; Mexico, 1,554,644 lbs, $144,410; Cuba, 48,180 lbs, $3,486; Colombia, 5,840 lbs, $553; Ecuador, 77,850 lbs, $9,097; Peru, 80 lbs, $9; total, 1,836,286 lbs, $170,932
STOCK—Cuba, $46,657
TOILET—British Honduras, $107; Costa Rica, $7; Guatemala, $3; Honduras, $940; Nicaragua, $293; Panama, $519; Mexico, $570; Cuba, $212; Chile, $122; Peru, $258; total, $3,031
SPONGES—Honduras, 2 lbs, $3
STARCH—Costa Rica, 200 lbs, $15; Honduras, 275 lbs, $21; Mexico, 60,000 lbs, $4,377; Other British West Indies, 232 lbs, $16; total, 60,707 lbs, $4,429
STEARINE FROM ANIMAL FATS—Mexico, 44,800 lbs, $10,528; Cuba, 89,584 lbs, $18,003; total, 134,384 lbs $28,531
SULPHUR ORE—Guatemala, 10 tons, $1,000; Honduras, 75 tons, $5,554; Mexico, 15 tons, $1,475; total, 100 tons, $8,029
TURPENTINE TAR—Costa Rica, 3 bbls, $24; Honduras, 2 bbls, $20; Nicaragua, 1 bbl, $10; Mexico, 20 bbls, $170; Cuba, 61 bbls, $512; Colombia, 12 bbls, $130; total, 99 bbls, $875
SPIRITS—British Honduras, 20 gls, $16; Honduras, 83 gls, $49; Nicaragua, 50 gls, $30; Panama, 2 gls, $2; Mexico, 85 gls, $76; Jamaica, 103 gls, $80; Cuba, 1,000 gls, $723; Colon, 62 gls, $41; total, 1,405 gls, $1,017
VARNISH—Guatemala, 9 gls, $27; Panama, 60 gls, $62; Mexico, 69 gls, $79; Cuba, 289 gls, $691; Colombia, 36 gls, $34; total, 463 gls, $803
WHITE LEAD—Guatemala, 45 lbs, $13; Honduras, 3,050 lbs $347; Nicaragua, 300 lbs, $38; Panama, 75 lbs, $11; Colombia, 100 lbs, $12; total, 3,570 lbs, $421
ZINC, OXIDE—Honduras, 1,000 lbs, $100; Mexico 3,400 lbs, $693; Colombia, 1,520 lbs, $187; total, 5,920 lbs, $980

Philadelphia, Pa.

ACID, PICRIC—France, 50,000 lbs, $23,300; Italy, 1,763,358 lbs, $1,234,351; total, 1,813,358 lbs, $1,257,851
ALCOHOL WOOD—England, 49,900 gls, $76,055
FLAXSEED—England, 2 bushels, $11
GREASE, LUBRICATING—England, $4,835
LARD—England, 34,092 lbs, $9,034
NEUTRAL—England, 310,241 lbs, $80,454
OIL, FUEL—England, 228,671 gls, $17,180; Cuba, 1,088,227 gls, $119,705; total, 1,316,898 gls, $136,885
GASOLINE—France, 2,059,049 gls, $488,804; England, 2,071,795 gls, $614,200; Nicaragua, 608,556 gls, $143,010; Cuba, 2,160,481 gls, $513,135; total, 6,899,881 gls, $1,759,140
ILLUMINATING—England, 1,073,252 gls, $88,543
LUBRICATING—France, 616,487 gls, $171,782; Italy, 607,639 gls, $167,055; England, 2,028,557 gls, $686,650; total, 3,252,683 gls, $1,025,486
NAPHTHAS—France, 2,070,574 gls, $486,585; England, 4,916,873 gls, $1,283,760; total, 6,987,447 gls, $1,770,345
PAINT—England, $6,350
PARAFFIN, REFINED—England, 61,050 lbs, $4,662
UNREFINED—England, 3,072,362 lbs, $324,373
PERFUMERIES—England, $6
PETROLEUM JELLY—England, $1,360
SOAP, TOILET—England, $7
SODA, SALTS—England, $2,832
TANNING EXTRACT—England, $13,935

San Antonio, Texas.

ACIDS—Mexico, $3,397
CARBOLIC—Mexico, 27 lbs, $17
NITRIC—Mexico, 36,630 lbs, $4,763
SULPHURIC—Mexico, 90,536 lbs, $9,520
ALCOHOL, WOOD—Mexico, 10 gls, $33
ANILINE DYES—Mexico, $4
BONES, UNMANUFACTURED—Mexico, $1
CALCIUM CARBIDE—Mexico, 22,010 lbs, $1,277
CEMENT, HYDRAULIC—Mexico, 1,584 bbls, $5,704
COAL TAR—Mexico, 2 bbls, $17
COLORS, DRY—Mexico, $1,375
COPPER SULPHATE—Mexico, 450 lbs, $77
DYES AND DYESTUFFS—Mexico, $103
FLAVORING EXTRACT—Mexico, $297
GLASS, PLATE, UNSILVERED—Mexico, 4,557 sq ft, $1,335
WINDOW—Mexico, 190 bxs, $1,451
GLUE—Mexico, 30 lbs, $12
GREASE, LUBRICATING—Mexico, $372
LARD—Mexico, 77,901 lbs, $28,575
COMPOUND—Mexico, 1,878 lbs, $360
LIME—Mexico, 244 bbls, $476
LOGWOOD EXTRACT—Mexico, $10
OIL, ANIMAL—Mexico, 8 gls, $13
COTTONSEED—Mexico, 40 lbs, $10
CRUDE—Mexico, 555 gls $45
GASOLINE—Mexico, 2,665 gls, $702
ILLUMINATING—Mexico, 99 gls, $21
LINSEED—Mexico, 736 gls, $1,125
LUBRICATING—Mexico, 7,291 gls, $2,504
NAPHTHAS—Mexico, 2,000 gls, $520
PARAFFINE—Mexico, 75 gls, $54
VEGETABLE—Mexico, $27
PAINT—Mexico, $13,209
MIXED—Mexico, 762 gls, $2,096
PERFUMERY—Mexico, $2,439
PETROLEUM JELLY—Mexico, $50
PLASTER—Mexico, $59
POTASH—Mexico, $500
ROSIN—Mexico, 2 bbls, $17
SODA ASH—Mexico, 580,482 lbs, $16,098
CAUSTIC—Mexico, 50,625 lbs, $2,405
SALTS—Mexico, $72,335
SOAP—Mexico, 1,061,897 lbs, $117,674
TOILET—Mexico, $3,819
STOCK—Mexico, $753
SPIRITS—Mexico, 15 pf gls, $118
SPONGES—Mexico, 33 lbs, $13
STARCH—Mexico, 10 lbs, $1
TURPENTINE, TAR—Mexico 4 bbls, $20
SPIRITS—Mexico, 325 gls, $267
VARNISH—Mexico, 319 gls, $383
WHITE LEAD—Mexico, 3,832 lbs, $488
ZINC, OXIDE—Mexico, 2,000 lbs, $230

San Francisco, Cal.

ACID—Costa Rica, $233; Guatemala, $360; Honduras $175; Nicaragua, $9; Salvador, $42; Mexico, $1,185; China, $34; Brit India, $35; Dutch East Indies, $11,349; Hong Kong, $6; Japan, $31,337; Australia, $993; New Zealand, $928; Philippine Islands, $969. Total, $47,655
CARBOLIC—Mexico, 242 lbs, $147; Japan, 29,876 lbs, $16,188. Total, 30,118 lbs, $16,335
NITRIC—Mexico, 254 lbs, $47; Dutch East Indies, 373 lbs $88; French Oceania, 100 lbs, $15; Philippine Islands, 200 lbs, $28. Total, 927 lbs, $178.
PICRIC—Mexico, 1 lb, $1
SULPHURIC—Canada 360 lbs, $23; Costa Rica, 1,600 lbs $78; Guatamela, 900 lbs, $150; Salvador, 3,300 lbs, $90; Mexico, 1,575 lbs, $80; Chile, 6,928 lbs, $1,504; Peru, 180,311 lbs, $5,716; Dutch East Indies, 405 lbs, $27; French Oceania, 3,500 lbs $139. Total, 198,879 lbs $17,807
ALCOHOL, WOOD—China, 1 gal, $1
ANILINE DYES—Salvador, $116; Mexico, $2; Chile, $11; China, $30,446; Dutch East Indies, $300; Hong Kong, $5,503; Japan, $150,917; Brit Oceania, $200; Philippine Islands, $79. Total, $187,574
ASPHALTUM, UNMFD—New Zealand, $1,078
BARK, TANNING—Japan, 179 tons, $8,000
BENZOL—Australia, 7,500 lbs, $850
BONES—Japan, $769
COAL TAR—Guatemala, 4 bbls, $48; Nicaragua, 4 bbls, $40; Salvador, 4 bbls, $48; Mexico, 16 bbls, $162; Chile, 1 bbl, $14; French Oceania, 2 bbls, $28; German Oceania, 2 bbls, $24; Philippine Islands, 40 bbls, $480. Total, 73 bbls, $844
DIST—Nicaragua, $68; Mexico, $78; Chile, 851; China, $6; Brit India, $12; Japan, $38,499; New Zealand, $30; Philippine Islands, $369. Total, $39,063
CALCIUM CARBIDE—Costa Rica, 6,000 lbs, $340; Honduras, 3,200 lbs, $188; Nicaragua, 4,000 lbs, $212; Salvador, 10,000 lbs, $567; Mexico, 24,280 lbs, $1,431; Dutch East Indies, 11,200 lbs, $1,210; Hong Kong, 1,600 lbs, $120. Total, 60,280 lbs, $4,068
COPPER SULPHATE—Costa Rica, 200 lbs, $26
COLORS DRY—Canada, $300; Guatemala, $137; Nicaragua, $906; Salvador, $78; Mexico, $2,519; Chile, $6,620; Peru, $204; China, $1,219; Dutch East Indies, $6,782; Hong Kong, $6,172; Japan, $4,937; Australia, $15,014; New Zealand, $78; German Oceania, $6; Philippine Islands, $1,989. Total, $46,961
DYES—Mexico, $27; China, $935; Japan, $39,564; Philippine Islands, $842. Total, $41,368
FLAXSEED—Mexico 1 bush, $12
FLAVORING EXTRACT—Canada, $56; Nicaragua, $46; Mexico, $185; China, $463; Korea, $6; British India, $158; Straits Settlements, $91; Dutch East Indies, $314; French East Indies $6; Hong Kong, $30; Japan, $61; Siam, $55; New Zealand, $74; French Oceania, $6; Philippine Islands, $996; total, $2,547
FORMALDEHYDE—Salvador, $67
GINSENG—Hong Kong, 4,061 lbs, $41,635
GLASS, PLATE, UNSILVERED—Mexico, 6 sq ft, $9; Hong Kong, 29,654 sq ft, $18,876; Japan, 25,870 sq ft, $7,051; total, 55,530 sq ft, $25,936
WINDOW—Guatemala, 150 bxs, $859; Mexico, 15 bxs, $102; Dutch East Indies, 51 bxs, $400; Hong Kong, 400 bxs, $2,700; Australia, 2,370 bxs, $14,335; total, 2,986 bxs, $18,396
GLUCOSE—Philippine Islands, 48,570 lbs, $3,078
GLUE—Costa Rica, 25 lbs, $7; Guatema'a, 200 lbs, $66; Mexico, 939 lbs, $265; Colombia, 50 lbs, $15; China, 15 lbs, $2; British India, 24 lbs, $15; British East Indies, 3,800 lbs, $880; Dutch East Indies, 49,300 lbs, $6,320; Hong Kong, 250 lbs, $65; Japan, 29,996 lbs, $5,322; Philippine Islands, 2,997 lbs, $565; total, 87,596 lbs, $13,522
GREASE, LUBRICATING—Guatemala, $120; Nicaragua, $432; Salvador $51; Mexico, $286; China, $1,204; Straits Settlements, $3,043; Dutch East Indies, $39; Hong Kong, $2,798; Japan, $200; Australia, $1,450; New Zealand, $533; Philippine Islands, $110; total, $10,086
GLYCERINE—Canada, 15 lbs, $20; Nicaragua, 15 lbs, $10; Panama, 50 lbs $40; Salvador, 70 lbs, $54; Mexico, 660 lbs, $340; China, 110 lbs, $85; total, 720 lbs, $549
LARD—Mexico, 6 lbs, $3; Bolivia, 15,000 lbs, $2,550; Chile, 2,250 lbs, $615; Colombia, 1,227 lbs, $315; China, 7 lbs, $2; British Oceania, 200 lbs, $48; French Oceania, 500 lbs, $165; Philippine Islands, 402 lbs, $90; total, 19,592 lbs, $3,788
COMPOUND—Nicaragua, 386 lbs, $105; Salvador, 440 lbs, $131; China, 70 lbs, $23; British Oceania, 200 lbs, $48; Philippine Islands, 34,634 lbs, $8,884; total, 35,740 lbs, $9,191
LIME—Straits Settlements, 24 bbls, $185; Dutch East Indies, 55 bbls, $156; total, 79 bbls, $341
CHLORIDE—Chile, 1,000 lbs, $95; Hong Kong, 31,563 lbs, $1,150; Philippine Islands, 4,140 lbs, $160; total, 36,703 lbs, $1,405
LOGWOOD EXTRACT—Mexico, $231; Japan, $15,295; Philippine Islands, $19. Total, $15,545
OIL, ANIMAL—Mexico, 2 gls, $2
COTTONSEED—Salvador, 375 lbs, $80; Philippine Islands, 4,758 lbs, $1,185. Total, 5,133 lbs, $1,265
FISH—Guatemala, 50 gls, $40; Mexico, 51 gls, $116. Total, 101 gls, $156
FUEL—Canada, 10,164,000 gls, $378,200; Costa Rica 424 gls, $94; Panama, 10,626,000 gls, $419,200; Salvador, 84,000 gls, $3,200; Mexico, 2,500 gls, $365; Chile, 51,500 gls, $15,448; Peru, 390,138 gls, $17,185; French Oceania, 17,278 gls, $1,940, Total, 21,335,980 gls, $836,632
GASOLINE—Costa Rica, 7,500 gls, $2,123; Honduras, 2,120 gls, $629; Nicaragua, 26,000 gls, $7,343; Panama, 116,000 gls, gls, $32,535; Salvador, 2,250 gls, $670; Mexico, 47,750 gls, $13,276; Chile, 75,000 gls, $16,712; Peru, 5,500 gls, $1,540; Australia, 334,080 gls, $96,863; New Zealand, 94,740 gls, $274,639; Brit Oceania, 1,000 gls, $280; French Oceania, 15,500 gls, $4,340; Philippine Islands, 308,250 gls, $87,819. Total, 1,904,540 gls, $545,791
ILLUMINATING—Costa Rica, 3,060 gls, $482; Guatemala, 35,000 gls, $5,250; Honduras, 1,000 gls, $151; Nicaragua, 75,000 gls, $11,175; Salvador, 26,400 gls, $4,645; Mexico, 55,500 gls, $8,320; Bolivia, 15,500 gls, $2,325; China, 3,600,000 gls, $225,000; Hong Kong, 49,180 gls, $7,377; Australia, 26,150 gls, $8,465; New Zealand, 422,160 gls, $63,395; French Oceania, 26,500 gls, $4,240; German Oceania, 12,750 gls, $2,040; Philippine Islands, 700,0000 gls, $95,375. Total, 5,048,200 gls, $438,254
LARD—Australia, 50 gls, $100
LINSEED—Guatemala, 620 gls, $959; Nicaragua, 50 gls, $60; Salvador, 330 gls, $621; Mexico, 513 gls, $903; Bolivia, 750 gls, $1,300 ; Chile, 302 gls, $60; Colombia, 10 gls, $18; Peru, 3,000 gls, $4,800; China, 40 gls, $76; French Oceania, 150 gls, $267; Philippine Islands, 2,100 gls, $3,717. Total, 7,593 gls, $12,781.
LUBRICATING—Canada, 6,166 gls, $1,539; Costa Rica, 600 gls, $300; Guatemala, 510 gls, $260; Honduras, 423 gls, $380; Nicaragua, 612 gls, $276; Salvador, 200 gls, $79; Mexico, 3,884 gls, $1,806; Colombia, 1,400 gls, $700; Ecuador, 9,002 gls, $285; China, 202,368 gls $44,511; Korea, 3 gls, $2; Brit India, 253,018 gls, $34,173; Straits Settlements, 22,256 gls, $10,995; Brit East Indies, 9 gls, $17; Dutch East Indies, 15 gls, $9; Hong Kong, 41,250 gls $5,457; Japan, 67,061 gls, $14,897; Australia, 709,749 gls, $169,366; New Zealand, 93,261 gls, $35,883; French Oceania, 1,736 gls $927; German Oceania, 1,120 gls, $616; Philippine Islands, 5,455 gls, $2,127. Total, 1,411,999 gls, $324,605.
NAPHTHAS—Costa Rica, 7,000 gls, $1,418; Salvador, 500 gls, $103; Mexico, 1,000 gls, $200; Australia, 1,920 gls, $393; New Zealand, 91,987 gls, $18,470; French Oceania, 61,072 gls, $11,401; German Oceania, 1,000 gls $190. Total, 164,479 gls, $32,175
PARAFFINE—Mexico, 10 gls, $7; Hong Kong, 5 gls, $2. Total, 15 gls, $9
PEPPERMINT—Mexico, 1 lb, $4; China, 2 lbs, $9. Total, 3 lbs, $13
VEGETABLE—Mexico, $8; Peru, $4,933; China, $4; Brit Oceania $25; Philippine Islands $6,689. Total, $11,659
VOLATILE—Mexico, $199; Japan, $3,966; Australia, $1,333; Philippine Islands, $231. Total, $5,739
PAINT—Canada, $1,615; Costa Rica, $37; Guatemala, $23; Salvador, $257; Mexico, 1,733, Bolivia, $1,877; Chile, $5,777; Peru, $2,500; China, $29; Brit India, $3,017; Straits Settlements, $5; Brit East Indies, $158; Dutch East Indies, $10,442; Honduras, $1,691; Japan, $2,652; Australia, $*5,730; New Zealand, $220; French Oceania, $659; German Oceania, $160; Philippine Islands, $10,353. Total, $58,940
MIXED—Canada, 765 gls, $815; Guatemala, 1,809 gls, $3,351; Nicaragua, 68 gls, $68; Salvador, 10 gls, $15; Mexico, 324 gls, $572; Bolivia, 175 gls, $280; Chile, 12,699 gls, $23,599; Peru, 326 gls, $674; China, 832 gls, $1,043; Brit India, 5,994 gls, $988; Straits Settlements, 226 gls, $644; Dutch East Indies, 6,726 gls, $14,390; Hong Kong, 321 gls, $604; Japan, 787 gls, $722; Australia, 5,670 gls, $8,298; New Zealand, 4,251 gls, $11,956; Philippine Islands, 6,231 gls, $9,763. Total, 47,214 gls, $87,782
PARAFFINE, REFINED—Mexico, 300 lbs, $24; Hong Kong, 10 lbs, $2. Total, 310 lbs, $26
PERFUMERY—Canada, $45; Nicaragua, $19; Salvador, $72; Mexico, $1,300; Chile, $28; China, $3,623; Korea, $38; Brit India, $8; Straits Settlements, $129; Dutch East Indies, $340; French East Indies, $4; Hong Kong, $55; Japan, $207; Australia, $2,053; Philippine Islands, $3,465. Total, $11,386
PETROLEUM JELLY—Costa Rica, $132; Mexico, $288; China, $34; Brit India, $950; Japan $4,002; Australia, $1,926; New Zealand, $3; Philippine Islands, $371. Total, $7,706
PLASTER—Honduras, $41; New Zealand, $3; Philippine Islands, $10. Total, $54
POTASH—Canada, $1,152; Mexico, $889; China, $62; Brit India, $6; Dutch East Indies, $6; Philippine Islands, $173. Total, $2,288
CHLORATE—Mexico, 220 lbs, $126; Dutch East Indies 14 lbs, $7. Total, 243 lbs, $133
PLUMBAGO, UNMANUFACTURED — New Zealand, 100 lbs, $5; Philippine Islands, 6,438 lbs, $399; total, 6,538 lbs $404
RED LEAD—Mexico, 875 lbs, $114; Peru, 4,600 lbs, $564; China, 13,205 lbs $1,473; Straits Settlements, 2,800 lbs, $320; Dutch East Indies, 115,150 lbs, $14,276; Hong Kong, 68,512 lbs $7,994; New Zealand, 7,840 lbs $980; Philippine Islands, 55,000 lbs, $6,220; total, 267,982 lbs, $31,941
ROSIN—Costa Rica, 36 bbls, $268; Nicaragua, 29 bbls $233; Chile, 4 bbls, $50; British Indies, 212 lbs, $1,750; Dutch East Indies, 1,907 bbls, $17,482; Hong Kong, 72 bbls, $700; Japan, 2,358 bbls, $19,860; Australia 2,182 bbls, $21,253; Philippine Islands, 45 bbls, $488; total, 6,845 bbls, $61,984
SOAP—Costa Rica, 2,500 lbs, $225; Guatemala, 150 lbs $13; Nicaragua, 97,823 lbs, $8,340; Panama, 70 lbs, $10; Salvador, 2,000 lbs, $210; Mexico, 109,899 lbs $9,086; Chile, 750 lbs, $52; Colombia, 12,250 lbs $890; Peru, 13,120 lbs, $928; China, 321,973 lbs, $25,630; Korea, 846 lbs, $99; Straits Settlements, 50 lbs, $3; Dutch East Indies, 600 lbs, $50; Hong Kong, 106 lbs $11; Japan, 228 lbs, $22; British Oceania, 400 lbs $48; French Oceania, 4,500 lbs, $420; Philippine Islands, 78,286 lbs, $8,888; total, 645,551 lbs, $54,834
STOCK—New Zealand, $168
TOILET—Guatemala, $550; Nicaragua, $66; Panama, $8; Mexico, $1,549; China, $7,961; Korea, $13; British India, $521; Straits Settlements, $6; French East Indies $276; Hong Kong, $338; Japan $9; Philippine Islands, $1,598; total, $8,895
SODA ASH—Nicaragua, 53,420 lbs, $2,387; Salvador, 112,000 lbs, $4,480; Mexico 7,500 lbs, $262; China, 50 lbs, $4; Japan, 1,655,128 lbs, $60,836; Australia, 60,032 lbs, $2,701; British Oceania, 5,250 lbs, $150; total, 1,893,380 lbs, $70,760
CAUSTIC—Nicaragua, 5,800 lbs, $377; Salvador, 22,800 lbs, $1,368; Mexico, 23,510 lbs, $1,776; Colombia, 35,000 lbs, $2,800; China, 27,293 lbs $2,264; Dutch East Indies, 195,200 lbs, $11,575; Japan, 84,680 lbs, $5,500; Philippine Islands, 272,100 lbs, $15,462; total, 666,383 lbs, $41,222
SAL—Mexico, 200 lbs, $6; Hong Kong, 22,400 lbs, $1,030; total, 22,600 lbs, $1,036
SILICATE—Canada, 40,099 lbs, $711; Nicaragua, 4,650 lbs, $139; Mexico, 400 lbs, $52; Philippine Islands, 12,000 lbs, $405; total, 57,239, $1,307
SALTS—Canada, $860; Costa Rica, $10; Guatemala, $190; Honduras, $2,030; Mexico, $11,163; China, $53; Korea, $10; Dutch East Indies, $33,979; Hong Kong, $158; Japan, $5,085; Australia, $1,115; New Zealand, $4,459; British Oceania, $3; Philippine Islands, $602; total, $59,816

(Continued on page 71.)

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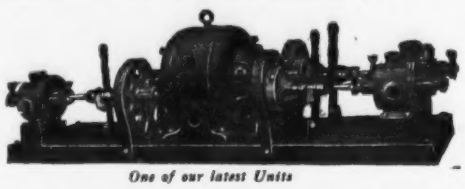

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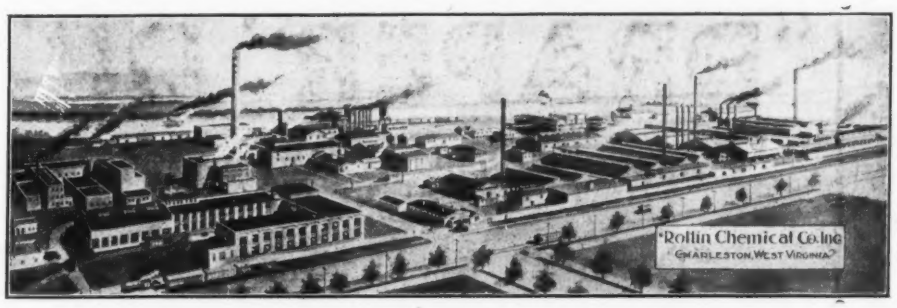

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CHEMICAL. **Oil, Paint and Drug Reporter** SECTION

Volume 94. No. 14. MONDAY, SEPTEMBER 30, 1918. 100 William St., New York

OIL, PAINT and DRUG REPORTER
ESTABLISHED 1871.
The following publications are incorporated in the REPORTER:

DRUG, PAINT AND OIL TRADE
NEW YORK DRUG BULLETIN
NEW YORK DRUGGISTS' PRICE CURRENT
SOAP MAKERS' JOURNAL OIL AND PAINT REVIEW
WEEKLY DRUG NEWS

Published weekly. Mailed every Saturday, under publication date of the following Monday, by the OIL, PAINT AND DRUG REPORTER, INC., at 100 William street, New York. William O. Allison, President; D. G. Bogert, Secretary.

Entered as second class matter, January 15, 1884, at Postoffice at New York, N. Y., under the Act of March 3, 1879.

THIS SECTION, PART II, OF THE ISSUE OF MONDAY, SEPTEMBER 30, IS THE CHEMICAL EXPOSITION SUPPLEMENT.

This section of the Reporter, pages i-lii, is an added section to our regular issue of September 30, 1918, and is mailed to every subscriber to the Reporter without charge. As a matter of convenience, and to bring the detailed report of the Fourth Exposition of Chemical Industries into separate form, it is bound separately from the regular issue, although mailed with it.

THE FOURTH EXPOSITION OF CHEMICAL INDUSTRIES—A LESSON IN WAR DEVELOPMENT—A TRIUMPH OF THE AMERICAN CHEMICAL INDUSTRY.

The Fourth Exposition of Chemical Industries, the last of the group to be held in this city until after the war, closed as the most successful ever held. It offered an inspiring parallel during its four years to the development of the American chemical and dyestuffs industries during the same period, the broadening out and the inclusiveness of the expositions of 1917 and 1918 pointing more than ever to the supreme position achieved by American chemistry since the descent of the modern Huns upon twentieth century civilization.

The synonym for the Fourth Exposition of Chemical Industries is the bull's eye. Metaphorically it evidences the ability of the chemists of this country to know their mark—and hit it. Actually, at the Exposition it was the badge of honor vouchsafed to those exhibits or parts of exhibits which have been manufactured in the United States only since the world-war swept laboratory and factory and office and university, creating chaos in a night, from the womb of which new industries have been born.

THE EXPOSITION AND THE WAR.

The several exhibits throughout the floors of the Grand Central Palace which had to do with war work, whether the coal-tar intermediates, picric acid or other bases for high explosives, the Browning gun, or the comprehensive displays of the Chemical Warfare Service of the United States were among the most popular of all the exhibits shown. Gas masks, gas projectiles, powerful explosives and the various chemicals entering into their production were all to be found.

Various types of gas masks, including those first used by the French and English when the Germans introduced this unprincipled method of fighting, as well as the latest develments in this field by the American, British, French and Italian governments were shown in one of the exhibits. There also was to be seen the "Yellow Cross" shell, a projectile used by the Germans in their mustard gas attacks, as well as a number of other trophies captured from the Germans. The new American type of gas mask was displayed, and its future use in mines was clearly indicated by uniformed attendants. Offensive gas warfare was also represented by specimens of shells and grenades of many sorts. They are designed for the various different types—sneeze, mustard, lethal, phosphorous for incendiary work and to produce white smoke, and others. An oval form of shell was shown, among others, that may fall into any position without becoming a "dub," which means a shell that fails to explode.

These horror-creators were notably of interest to lady visitors, who, doubtless, desired an adequate idea of what sons and brothers and husbands are facing or utilizing on the battle front of Europe.

THE COAL-TAR DYE AND CHEMICAL EXHIBITS.

At the opening session of the Exposition program on Monday afternoon Dr. Charles H. Herty, ex-president of the American Chemical Society and chairman of the Advisory Committee of the American Chemical Society on the Exposition, set forth in his opening address the statistical position and growth of the American dyestuffs industry. Yet, better than any eloquence from the rostrum, were the colorful displays at the booths of the prominent makers of aniline dyes, intermediates and coal-tar chemicals. The array was endless—and the bull's eye of American achievement was to be seen at every hand.

Rainbows of fabrics, of hanks of yarn, skeins of silk, with the gamut of color prisoned in show case and display jar, the contrast between this symbol of achievement and the ponderous machinery was vivid. And yet the one could not have existed without the other, nor could either have been perfected without the painstaking research and experimentation of the industrial chemist, whose achievements were crystalized in the exposition.

A COSMOPOLITAN INDUSTRIALISM.

The scope of the exhibits was little less than marvelous when compared with the earlier expositions of the group, comprehensive as they were for the period they represented.

Dyes, potash, abrasives, coal-tar products, aniline colors; the wonders of electrochemistry, electrolytic copper, aluminum, liquid chlorine, the output of the electrolytic cell, without which none of the deadly gases of modern warfare could be made, since chlorine is the basis of them all; ore flotation; potash precipitation; acid production, with ovens, and nitrators and dryers, vacuum pumps, evaporators, centrifugals; crystalizers, water stills, mixers, briquetting machines; a wonderful display of chemical stoneware and glass and enamel-lined machinery; oils of every description and for every use; acids and heavy chemicals of every type; containers, casks, drums and tanks—the array was amazing.

THE SYMPOSIA AND MOVING PICTURES.

In view of the importance of the Exposition as a mirror of war-time development, it was to be expected that, in the arrangement of the program for the day-by-day exercises, industrial chemistry should be the text. On Wednesday, for instance, experts from the largest potash-producing plants in this country—representing the brine lakes of Nebraska and California, the cement dust recovery plants of the South and the giant kelp beds of the Pacific—told of the achievements of the chemist in meeting the demands of the Government and of the American consumer after the war had shut off the receipt of the potash compounds from the Continent. The display on the screen of these potash processes, step by step, met the demand of the laymen for a non-technical presentation of the facts in which he is so greatly interested.

Acid production was the subject of Tuesday's symposium, with figures not before presented covering the strides made to meet war demands. What was told was of intense interest, and yet, had it been possible or permissible, since much of this information cannot be spread broadcast because of necessary war secrecy, still greater wonders concerning new chemicals, new processes, new explosives and new gases could have been disclosed.

SHOWN ON THE SCREEN.

The moving picture program was worthy of the Exposition. Opening with comprehensive pictures of the natural power resources of the country on Monday, with views of the nitrogen fixation plants and processes at Niagara Falls, the views swept over a vast field of industry. Soap, natural gas, lake asphalt, roofing and colloids; the operation of a by-products coke plant; moving a forest to France; the story of potash, the production of sulphate of ammonia and its use in agriculture; glass and porcelain making, particularly in its relationship to chemical industry; the manufacture of zinc oxide, wrought-iron pipe—all were shown. In addition such constructive reels as "Careless America," "The Crime of Carelessness," "The Workmen's Lesson," "Vaccine for the Prevention of Disease" and "Keep Your Business Going," a lesson in fire prevention, preached the new doctrine for America of conservation of health, life and property.

WHAT OF THE FUTURE OF THE EXPOSITION.

There was a sharp sense of disappointment felt generally in the chemical industry in the East at the announcement many times made that there would not be another chemical exposition in New York until after the war. The reason is obvious—the Grand Central Palace has been taken over by the Government for reconstruction hospital purposes, and there is no other available exposition building in this city worthy of the chemical exposition in 1919.

But, the Fifth Exposition of Chemical Industries will be held, the scene being the Coliseum at Chicago during the week of September 22, 1918.

The chemical associations and manufacturers of the West, and particularly the Chicago Section of the Amerian Chemical Society, are enthusiastic over the outlook, and the results are expected to eclipse those already attained, since the exposition will remain under the efficient management of F. W. Payne and Charles F. Roth, who have done such magnificent work in bringing the past expositions to their high point of completeness and effectiveness.

WHAT THE REPORTER PRESENTS.

In the following pages will be found the principal addresses delivered at the symposia which were the intellectual pabulum furnished during the week, together with special material of allied interest to the chemical industry. Many photographic reproductions of striking booths and exhibits are also used, together with photographs of speakers prominent in the activities of the Exposition.

We would call attention also to the roster of representative firms advertising in this issue of the Reporter, as well as in the pre-convention number of September 23.

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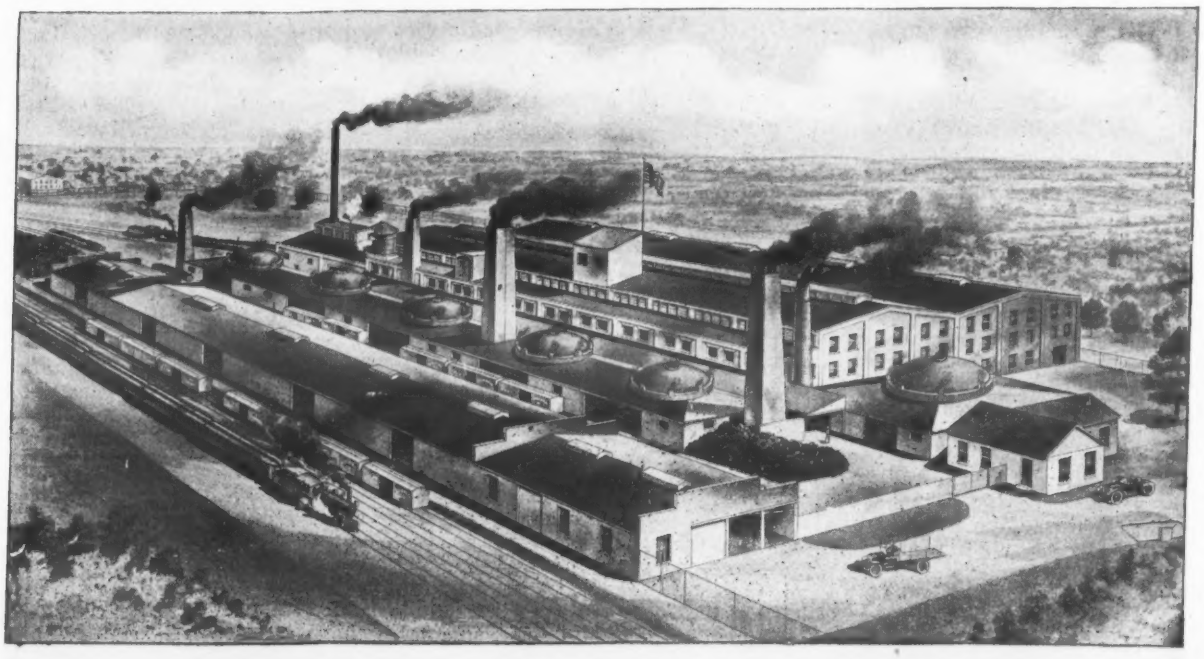

Greatest Chemical Exposition Ever Held

The Bull's-eye of Achievement on Every Hand Points to New Production in the United States of Chemicals, Dyes and Other Products Imported Prior to the World War—Unusual Exhibits, With the War Preparedness Note Predominant—A Fine Program of Moving Pictures Showing the Birth of Many New Products and the Growth of the American Potash Industry—Exposition for 1919 to Be Held at the Coliseum, Chicago.

The Chemical Industry of the United States has scored an amazing string of bull's eyes. As a distinctive mark of progress in the development of chemical output in this country every exhibit or part of exhibit shown at the Exposition of Chemical Industries at the Grand Central Palace which has been made here since the war bears a distinctive bull's-eye label. And they were to be seen on every hand.

In fact, according to the management, the keynote of the Exposition, as borne out by the bull's-eye labels, is *"Deutschland uber Nix!"*

While no high explosives or poison gas is exhibited, owing to their dangerous nature, the processes by which they are obtained and manufactured are illustrated by machinery exhibits large and small and by motion pictures. Naturally the side of chemistry that is related to munitions is most interesting to the general public. Gas masks and their operation, bombs, high explosive shells, etc., loom importantly in the layman's mind; but equally important are the wonderful industrial chemical and electrochemical processes and inventions, operated on a most gigantic scale since the United States went to war—operated on a scale never even conceived in peace times.

The three lower floors of Grand Central Palace were filled with large displays of all sorts of chemicals and machinery that are not interesting merely to the chemist and scientist, but to the laymen as well. At the hundreds of booths and displays there were demonstrators, who willingly explained their products and processes in simple language that is understandable to the non-expert in chemicals. Much of the machinery was in operation, some of it very heavy and weighing hundreds of tons. It was the largest and most important exhibit of its kind ever held. Indeed, it was considered such an important exposition by the Government that officials at Washington permitted it to go on as scheduled, although the Palace was taken over by the Government for war purposes.

What America has accomplished in taking the enormous chemical, glass and dye industries away from Germany—and taking them permanently—is being demonstrated most decisively.

The success of the American chemist in meeting the demands of the war, the growth of the dyestuffs, intermediates, chemicals and glass industries, the need for still further co-operation between the colleges and institutions of learning and the industries, were impressed upon a representative body of chemists at the opening session in the auditorium on Monday afternoon.

Charles F. Roth, co-manager of the Exposition with F. W. Payne, presided, and introduced the several speakers—Dr. Charles H. Herty, chairman of the Advisory Committee and former president of the American Chemical Society; F. J. Tone, president of the American Electrochemical Society, and G. W. Thompson, president of the American Institute of Chemical Engineers. Dr. William H. Nichols, president of the American Chemical Society, could not be present, as he is confined to his home as the result of a recent accident in Canada. He, however, sent his greetings to the committee and to the Exposition in a letter read by Dr. Herty. The addresses of Dr. Herty, Mr. Thompson and Mr. Tone are printed herewith:—

Permanent Chemical Independence.

By CHARLES H. HERTY.
Chairman, Advisory Committee.

This annual assemblage of the products of American chemical industry and of the mechanical appliances by which these products are manufactured provides fitting occasion for a stock-taking for the permanency of those additions to our national wealth whereby economic independence may be assured. To secure this independence it is essential that there should be close co-operation between the chemist and the American people, which can only be brought about when the chemist takes the people into his full confidence regarding the problems whose successful solution is a matter of joint responsibility. By the presentation of these exhibits and by open discussion of the problems confronting the industry a sympathetic understanding is produced which creates a sound, intelligent public opinion, which is the greatest asset any industry can posses.

The number of exhibitors continues to grow, in keeping with the continued expansion of the industry throughout the nation. The only disappointment is the setting aside by the Railroad Administration of the large plans which had been inaugurated by the industrial departments of the several railroads for presenting here a marvelous display of those natural resources of this country which still await the touch of the chemist to rise to their true dignity as invaluable assets. It has been deemed necessary to eliminate during war times this most promising and well inaugurated line of development. This backward step is a matter of keen regret, taken, strange to say, just at a time when, for economic efficiency, increase rather than curtailment of such development was to be expected, and when the call for the chemist was insistent from all other centers of industrial life. It is sincerely to be hoped that maturer consideration will result in a reversal of this gravely erroneous policy.

Measures of Expansion.

In taking stock of the chemical industry first thought turns naturally to the matter of available capital. The amount of capital accessions has continued to grow. During the first eight months of 1918, $59,164,000 was added, making the aggregate authorized capital invested in the industry since August 1, 1914, the date of the outbreak of the war, $3 6,967,000.

These figures do not include, of course, the investments made by the national government in the great chemical plants whose output is used solely for war purposes. The total production of these plants sets our government apart as the largest manufacturer of chemicals in the world. In the after-war period, when the story may be told of the rapidity of construction and of the enormous output of these plants, it will add a brilliant chapter to the romance of chemistry. Meanwhile, we can rest content in the assurance that the great army which we are now hurrying to Europe will be abundantly supplied.

Perhaps the picture of the growth of the industry can best be gathered from a few figures concerning our export trade, for export statistics indicate production in excess of domestic needs, great as these demands have been during the past year. Four items have been selected, three because of their fundamental character, and one on account of the rapidity of its development.

Exports.	1913-1914.	1917-1918.
Sulphuric acid	12,000,000 lb.	68,000,000 lb.
Caustic soda and soda ash	negligible.	334,000,000 lb.
Benzol	negligible.	25,000,000 lb.
Dyes, dyestuffs and dyewoods	$357.000	$17,000,000

Doubtless in future years these figures will appear diminutive, but at present they constitute an inspiring hope for that future.

A fair measure for that increasing participation of the Government in chemical activity is shown in the supplemental appropriation estimates submitted by the War Department to Congress on September 17, 1918. Aside from the great appropriations for explosives there has been requested for the Chemical Warfare Service, the recently organized division having to do solely with offensive and defensive gas warfare, $198,704,000, a sum greater than was asked for the clothing of the increased army we are now raising. Germany began poison gas warfare; within the next twelve months it will have more than its fill of it.

Public Support.

The present status of the American chemical industry and its prospect for the future must prove gratifying to all good citizens of this republic, but these prospects can never be fully realized unless the work of the chemist is supported by sound and loyal public opinion, which, in turn, will eventually manifest itself in the form of a thoroughly sympathetic attitude on the part of official representatives of that public opinion.

The stress of war preparations and the great part we feel that we are destined to play in the decision have aroused a wholesome national pride, which should contribute to the development of an atmosphere of good will. America must make good! America can make good! America shall make good! These thoughts fill the minds of our people today. The craze for "imported goods" which has so often palsied industrial effort is now being supplanted by pride in domestic achievement. Certainly the label "Made in Germany" no longer exerts its hypnotic influence over the masses of the world. Yet German propaganda is insidious, is ever present, and must constantly be combatted if we are to gain that measure of national self-containedness in essential industries which will guard us against a recurrence of the economic tribulations which characterized the period immediately following the blockading of German ports. The chief centers of that disturbance were coal-tar chemicals (dyes and medicinals), and potash; and I beg to ask your serious attention to certain conditions attending the efforts to create these industries in this country.

Dyes and Gas Warfare.

No word is needed concerning the marvelous development of the dye industry. It is here to-day for your inspection. Nor need I dwell upon the close relation of this industry to that of high explosives. That point has already sunk deep into our national consciousness. It was appreciation of this relation perhaps even more than economic need, which brought together producers and consumers in a unique display of unanmity which procured from Congress a protective tariff and anti-dumping legislation which guaranteed life for the young industry.

There was an additional argument for such legislation, however, undreamed of by any of us at that time. We had not entered the war ,and gave no thought to the efforts which might be required of us in the matter of poison gas production. But when our authorities, following our entrance into the war, determined to meet the Germans with their own weapons and on a scale far greater than they had ever contemplated, it became necessary to make use of every available means for manufacture of toxic material. The great plants planned for government construction and operation were not sufficient for the program. I am violating no confidence in telling you that at this juncture the Government turned to the young dye industry for plants and trained organizations to augment its poison gas output, and splendidly has the young industry responded. For military reasons I am advised not to mention specific plants or the products manufactured therein, but with official sanction I may say that five dyestuff plants are now participating in the production of this matehial, while many others are contributing indirectly to the same end. The plants were suited to the needs, staffs and workmen were familiar with this kind of work, and the process of conversion to the new role was thus enabled quickly to be made.

In view of the adaptability of the dyestuff industry, to such serious national needs, it is difficult to be patient with many of our mercantile establishments which still insist upon placarding their counters with signs such as "The color of these goods cannot be guaranteed." What a sweet morsel of comfort these placards are to the enemy, in effect an effort to preserve the market for him, by our own people, if such they are! Was it ever the practice to guarantee all colors Certainly not, for even before the war nine-tenths of the dyes were not fast and did not need to be. Moreover, are our merchants not yet aware of the conditions which led for a time to the uncertainties as to color fastness Do they not know that in the period of acute shortage of German dyes, before the American industry was started, many German dyes were used for purposes never intended, and so gave bad results, in most cases falsely attributed to American origin, and so when remaining German stocks approached depletion, and the American products began to appear on the markets, these were likewise used in ways never intended, with equally as poor results as in the case of the misuse of the German dyes. With the present adequate domestic production, these matters are correcting themselves. Public sentiment can, and I believe will, make an end of the disloyal placards.

Needed Legislation.

Assurance of the future of the coal-tar chemical industry lies not only with our people as a whole, but even more directly with their representatives in Congress, for it must not be forgotten that legislation stands today, as a result of the enactment of the 1916 general revenue bill, which is directly in favor of the German industry, the risk of the very life of the American industry. Every phase of the domestic industry has been studied by the Tariff Commission, and, according to a recent statement of a representative of the commission, its report to Congress will be published soon after the passage of the revenue bill. While nothing is known of the character of this report, I

CHARLES H. HERTY
Chairman, Advisory Committee, Exposition of Chemical Industries

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am confident that when the results of this impartial study of the industry are presented to Congress the same unanimous vote will characterize the correction of errors of existing legislation as has just marked the passage by the House of the $8,000,000,000 revenue measure. But the time for action is short if we achieve the great military victory in 1919 to which all look forward with supreme confidence. No opportunity must be afforded for the practice of industrial infiltration which may sap the very foundations of the coal-tar chemical industry.

In this connection may I suggest the legislative correction of an error for which we chemists are primarily responsible. In the existing act intermediates are assessed one-half the duties of finished dyes, which ration was adopted by Congress upon our recommendation. Experience has shown that this differentiation is a mistake. The difficult stage of production is from the crudes to the intermediates, far more difficult than from the intermediates to the finished dyes. And it is in the field of intermediates that dyestuffs, high explosives and medicinals meet upon common ground. Furthermore, it is evident that when these industries bear the brunt of foreign attack the enemy will take advantage of questions of definition to avoid the higher duties, or will seek to accomplish the same purpose by shipping the lower assessed intermediates for assemblage here into finished dyes by simple processes requiring little outlay. Justification of this contention is furnished by the following extract (page 22) from the "Census of Dyes and Coal-Tar Chemicals 1917," just issued by the Tariff Commission:—

With these exceptions the American dye industry was based entirely on imported intermediates. . . . This peculiar situation was due primarily to the provisions of the tariff laws of 1897, 1909 and 1913, whwich have consistently placed a higher duty on dyes than on intermediates. In general, the German industry dominated the field, and the Americans were unable to compete. It happens, however, that in the making of certain dyes the last chemical step of transforming the intermediate into the finished dye is a comparatively simple and cheap process. As the rate of duty on intermediates was lower than that on the finished dyes, the margin in some instances was sufficient to make it profitable to avoid paying the higher duty on dyes by importing the intermediates and completing the manufacture of the dyes in the United States.

Must Strengthen Our Forces.

Knowing, therefore, where the attack will be made, would it not be the part of wisdom for us to strengthen our forces at this point by legislation which will place all of these products on the same dutiable basis

Coal-Tar Medicinals.

Coal-tar dyes have received an abnormal amount of attention from our people and our press. Of equal importance and of far greater meaning to the comfort and well-being of our people are the coal-tar medicinals. In spite of unfavorable legislation our manufacturers have worthily met their responsibilities in this field. Especially is this noted in the recent statements of government officers that the needs of our army for these materials had been fully met by our home output. Congress, I am again confident, will correct the unevenness in legislation which hangs as a life-threat over this line of production.

Congressional action, however, will not suffice initself, for, in the matter of medicinals we are particularly susceptible to our prejudices. A well-advertised name frequently means more to us than a knowledge of quality. In this connection it has been amazing to note a persistent campaign of newspaper advertising, seeking to convince our people that only tablets of aspirin stamped with the magic word "Bayer" (a German name!) In such times as these give assurance of genuine acetyl salicylic acid. These tablets are "made on the banks of the Hudson," but in the plant of an enemy-owned corporation now controlled by the alien property custodian. This material, no longer patented, sells to-day in large quantities and at a price greatly above that of the same substance manufactured by American firms, whose product has been shown by official tests to be of equal purity. The most remarkable feature of this advertising campaign is that it is being carried on by American directors, appointed by the alien property custodian, and with the American directorship emphasized in the advertising matter, thereby beclouding the main issue of enemy ownership. Zeal in trusteeship is of course, commendable, but a campaign of misrepresentation and of exploitation is reprehensible. Good faith does not demand the piling up of undue profits for the benefit of Germany after the war. We do not need such assets for settlement of war claims, for according to recently published figures the value of German property already seized in this country is fifty times that of American property seized in Germany. Away with any such flaunting of false German superiority. The public should rebuke it and follow the example of pharmacist de Haven of West Chester, who was recently reported in the press to have burned his large stock of aspirin manufactured by the enemy-owned corporation, and then "telegraphed for a fresh supply from a real American firm!"

Independence in Potash Supplies.

The blockade of German ports produced a great shortage not only of coal-tar chemicals, but also of potash for fertilizers. In many respects the two situations were closely analogous—the acute shortage, the complete dependence, and the consequent sharp rise in prices. In the case of the coal-tar products the situation was met by a prompt union of forces on the part of producers and consumers, the latter being largely New England mill men who would not shy at the matter of protection of a home industry by tariff. The chief consumers of potash, however, are the cotton planters of our Southern states, and amongst these advocacy of a protective tariff was unthinkable. Producers and consumers therefore failed to get together for the common fight against foreign dependence.

The abundance of raw material is just as favorable for a domestic potash industry as was the case in the coal-tar chemical industry. The brines of Nebraska, now yielding 60 per cent. of our present production; Searles Lake, in California, estimated to contain from 10,000,000 to 20,000,000 tons of potash; the giant kelps of the Pacific Coast, with their remarkable power of selective potash extraction from sea water; the alunite of Utah; precipitated cement dust, with an estimated possibility of 50,000 tons of potash per annum; the dust from blast furnaces, with a possible yield of 200,000 to 300,000 tons per year; the potash-silicates, such as the green sands of New Jersey and the Carterville slates of Georgia—wherever we turn, potash is at hand, in forms, however too slowly available for plant food, but awaiting the skill of the chemist backed by necessary capital.

In spite of the lack of co-operation during the past three years some progress has been made. The 1000 tons of K_2O produced in 1915 was increased to 9,720 tons in 1916 and 32,000 tons in 1917. Much fundamental investigation has been carried out, and the promise for the future is hopeful. Success can be predicted if producers and consumers get together, and if public opinion is aroused to the fact that failure to secure national independence in this matter vitally affects the entire nation. The mining bill, as modified by Senator Henderson, and now before the Senate, may prove the solution. It may be that protective duties or direct subsidy will be called for, or possibly the relief of capital invested in this industry from war taxation. Whatever the cost and whatever the method adopted, Government assistance is needed and may be secured if the demand is nation-wide. Independence in potash can be assured if this country makes up its mind that it will no longer be dependent upon Germany for its supplies, but its mind must be made up quickly. This is one of the most urgent questions, in both its economic and its political aspects, before this country to-day. We cannot afford to neglect it.

F. J. TONE

President, American Electrochemical Society

America's Supremacy in Electrochemistry.

By F. J. TONE.

President American Electrochemical Society.

During the past four years we all must agree that the chemical industry of America has passed through the most important period of its history. This has been a war not only between efficiently organized armies and nations but between efficiently organized industries. Our chemical industry to-day is pitted against the chemical industry of Germany and one has only to study this great exposition to be convinced that the American chemist is going to measure up to his opportunity. At the beginning of the war our industry was highly organized in special fields, but it lacked symmetrical development. It was unbalanced. It lacked self-containedness and co-ordination. It has taken the war to enable the chemical industry to find itself and it has likewise taken the war to enable this country to discover that it has a great chemical industry and to recognize it as a great national asset; and it must be said that one of the big forces which have worked toward the progress of chemistry and toward public recognition of chemistry in America has been this exposition. We give all honor to the men whose foresight and energy made this possible.

In this big forward movement of the past four years the electrochemist has played a large part. America has long enjoyed a supremacy in electrocmehistry but in spite of the strong position of the industry before the war no one would have dared to predict the expansion which the war would demand of us. It has called for chlorine, cyanamide, air nitrates and phosphorus in vast quantities. It has required the ferro-alloy industry, the electrode industry, and the abrasive industry to quadruple their outputs.

Electrochemistry and Air Work.

As a single example, consider briefly the contribution of electrochemistry and electrometallurgy to the aircraft program. The airplane motor has a crank case and pistons of aluminium. Its crank shaft and engine parts subject to the greatest strains are all composed of chrome alloy steel. All of these parts are brought to mechanical perfection and made interchangeable by being finished to a fraction of a thousandth of an inch by means of the modern grinding wheel made from electric furnace abrasives. Calcium carbide and its derivatie, acetylene, are making possible an ample supply of cellulose acetate for airplane dope. When the aviator trains his machine gun on an enemy plane his firing is made effective by tracer bullets of magnesium or phosphorus. When our bombing planes begin to carry the war into Germany, it will be with bambs perhaps of ammonium nitrate or picric acid or other high explosives all depending largely in their manufacture on electrochemical reagents. Without the pioneer work of Hall, Acheson, Willson, Bradley and others, the present aircraft program would be impossible of achievement.

Then there is gas warfare, the very basis of which is chlorine. Germany has long been a nation of chemists and when she planned a war of frightfulness it followed as a matter of course that she should seek to make it also a war of chemical frightfulness. Much as we deplore it, therefore, we have been forced to throw our best energies to the solution of the problems of gas warfare. It is interesting to note that chlorine, the product of the electrolytic cell is the basis of mustard gas, chlor-picrin, phosgene and almost all of the important war gases. Thus does electrochemistry enter fundamentally into the modern military machine.

A Chemists' War.

It is important for us to remember that while we are working to develop our industry to a point where it will meet the demands of the war, our work is only begun. If this is, in a measure, a chemists' war we must work to see that afterwards we have a chemists' peace. After the war will come bigger problems and bigger responsibilities; no one will have a bigger opportunity than the chemist to make life better and to serve his fellow man. We have the problems of the conservation and proper utilization of our resources, the elimination of wastes, the problems of foodstuffs, clothing and sanitation. All these problems and many others touch the everyday life of the people and are pre-eminently the problems of the chemist. Fortunately the nation is coming to realize to what an extent it depends in war and in peace on the work of the chemist. By the establishment of the Chemical Warfare Service, our place in the military organization has been definitely recognized. We want the same recognition in the councils of the nation after the war. We want the Government to recognize the value of scientific methods, and we will look to this exposition in future years as one of the forces which will visualize to the rest of the country the role of the American chemist.

G. W. THOMPSON

President, American Institute of Chemical Engineers

Importance of Chemistry in Industry.

By G. W. THOMPSON.

President American Institute of Chemical Engineers.

This National Exposition of Chemical Industries, the fourth that has been held, is a growing illustration of the advantage to our industries which chemistry has afforded. The growth of our industries of all kinds has been greatly assisted by chemists. Strictly speaking, all industries are chemical industries, but some are more obviously chemical industries than others. This exposition has to do naturally more with the industries which are obviously chemical, but the general proposition that all industries are dependent upon chemical processes should be emphasized, even if in each case the connection is not obvious to the unthinking man.

We learn by adversity. This war has taught us that all industry is more or less chemical in its character. The fact that the assistance of chemistry has been particularly demanded during the last four years has been due to the fact that our most powerful enemy has been, perhaps, a little wiser than we have been in the past; and we, seeing the extent to which chemistry could be of service to a nation, both in war and in peace, have learned a lesson, although our education in this respect may not be complete. If chemistry has been of great assistance to us during this war, how much more will it be of assistance to us when the war is over and we are again in competition with a great commercial enemy that earlier learned the lesson of which I am speaking. The few remarks that I have to make today are in the direction of trying to impress upon our people the necessity of learning this lesson more completely, learning it from day to day, learning it with respect to war and with respect to peace.

A Triple Message.

Every one needs instruction along this line, but I will address myself particularly, first, to those who control manufacturing operations; second, to the universities and colleges where chemists are taught; and third, to chemists themselves. Those who control manufacturing operations must learn more fully and completely the need of chemical knowledge for the perfection of industry, the need of chemists in their organization. Our universities and colleges must learn that however valuable pure chemistry may be

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as an interesting study and for the purpose of training the mind the most important thing that chemistry does is to be found in its application; that while it is extremely interesting and upbuilding to think in terms of atoms and molecules, it is equally important to think in terms of large quantities of the chemical components that enter into reactions. Chemists must learn more fully and completely the need of applying their knowledge to chemical processes conducted on a large scale.

Permit me to elaborate my appeal for a greater education of these three groups of individuals. Again, let me speak to those who are at the head of concerns that control manufacturing operations. They will, without doubt, agree to the broad academic statement that I have already made, that all manufacturing industries are chemical to a greater or less degree and that for their successful prosecution the chemist is an essential factor. Some manufacturers are more progressive than others in this respect, and they are the ones who have made the greatest success in recent years. This academic statement, however, is to be valued by its application. Manufacturers need chemists and they should do everything in their power to secure a supply of the best chemists possible. The progress of manufacturing is dependent upon the development of chemical knowledge, and manufacturers should give their power to the development of chemical knowledge.

What Manufacturers Can Do.

Manufacturers can do a great deal to help the universities and colleges in developing more efficient methods of instruction. They can do this by calling university and college professors into their councils and developing the practical sides of these professors so that the students in their charge will be developed along lines which will be useful to industry. The teacher in chemistry who is not in touch with practical manufacturing operations cannot properly instruct the student under him and build him up so as to make him capable, on graduation, of entering into the industries and applying his knowledge to their furtherance.

Practical business men often distrust college professors. They say that they are theoretical and visionary. This in many cases is due to the fact that the practical business man has a narrow vision. Sometimes it may be true that instructors in chemistry have not a practical turn of mind. Whether this view of practical business men is true or not, the remedy is in their hands, and if they will see their broad duty, they will throw open their plants more freely to instructors in chemistry and make the education of chemists a part of their organized plan. In other words, our colleges and universities must be used by our manufacturers and our manufacturing plants must be opened to use by our universities and colleges.

Now, let me address another word to our educational institutions. They are not entirely free from criticism. It is my opinion that the educational institutions of this country should give honorary degrees to men who have accomplished big things in the industrial world. The practice in many of these institutions is to give degrees only to those who have done original work in what is called pure science, but which work may be of no immediate practical use. It is my opinion that the man who discovers by hard labor things of practical value in the chemical world is deserving of some recognition from our colleges for his contribution to practical science.

More Practical Education.

I believe that our universities and colleges should, all of them, turn more to the practical aspects of education. Many of them think only of its cultural side. Culture is desirable; no one questions this, but culture is not incompatible with an education that suits a man for the practical affairs of life. It is absurd to say that a man, to be successful in the business world, must be a boor, for its corollary is that the man of culture cannot succeed in the business world. Culture with an education that will make the student of practical use is what we want, and the educational institution that thinks only of culture is about as bad off as the educational institution that thinks only of the practical affairs of life. Our educational institutions should keep in touch with manufacturing operations, and instructors in chemistry should keep their feet upon the earth, even if we can not expect them at all times to keep their heads out of the clouds.

Since this war started it has been a wonderful thing to see how chemists generally have offered themselves to our Government in the hope that they would be able to help in solving the practical problems confronting it. Many instructors of academic chemistry descended from their exalted positions and attempted to handle problems which they, by experience, have been unfitted to solve. All honor to these men; we do not criticize them, and have only praise to offer for their self-sacrifice. How much better would it have been, however, if these men had been better acquainted with the practical matters with which they became intrusted. They came nobly to our country's assistance. They broke down the barriers with which they were surrounded, and it is a delicious hope that when peace arrives they will not allow these barriers again to be erected.

What Chemists Can Do.

To chemists generally I address this word:—You have the power of influencing the opinion of manufacturers, those that control industries and the opinions of those who control the policy of our educational institutions. I would ask you to insist upon it that the manufacturers of our country and our educational institutions get closer together and that between them there be opened up wide avenues of intercourse. The result will be that each will be modified. Our industries will be influenced by our educational institutions and our educational institutions will have breathed into them some of the life of the business world.

We all know that this exposition is to be a success, but success in the best sense of the term involves the power of growth. Success does not consist only in the doing of single definite things, but in the bigger sense means the doing of a series of definite things, each member of the series being of a greater value than that which immediately preceded it. My few remarks are directed to the desire that chemists and chemical industries, and expositions of this kind will have the vitality and growing power so that each succeeding achievement will surpass that which preceded it, in a progressive and developing series.

DR. CHARLES BASKERVILLE

Presiding Officer, Tuesday's Symposium on Acids and Industrial Chemistry.

TUESDAY.

Symposium on Acids and Chemical Engineering.

Despite the fact that the attendance at the exposition is never regarded as large on the second day of its being, there was a full attendance, so to speak, at the symposium in the conference room on Tuesday afternoon, when the topics discussed were acids and chemical engineering. Fully two hundred interested men filled the conference room to capacity to hear papers by Dr. Charles Baskerville of the College of the City of New York, who presided as chairman; E. J. Pranke, president of the American Cyanamid company, and Emerson P. Poste, chemical engineer of the Elyria Enameled Products Company.

Dr. Baskerville, in opening the afternoon's session stated that he had noticed in an unofficial program a statement that he would give an interesting talk on the development of the chemical industry which would be brief probably. He declared he agreed with the authors of the unofficial program as to the shortness of his address, adding that he did not intend to take up much of his auditors' time with remarks by himself, when there were other qualified persons prepared to speak on subjects of prime importance. He then launched into the address which he had previously prepared and which he read from the manuscript and which follows:—

"The Development of Chemical Industries in the United States, Notably Since July, 1914."

DR. CHARLES BASKERVILLE,
College of City of New York.

The use of poison gases in the war has been a stimulating factor in causing the American people in general to realize the importance of chemistry in the maintenance of life. All persons who can read, and some who only run, have heard of this novel weapon in war, and many of them now for the first time begin to realize the industrial significance of this occult science. Farsighted industrialists in the United States have for some time appreciated the utility of chemistry and its researches. They have built up large industries and made fortunes as a result.

To be sure, the government laboratories have informed the people as to food adulteration, municipalities have provided pure drinking water and realize the necessity for sewage disposal. The medical profession has disseminated chemical knowledge in teaching means for prevention of disease and ways for curing body disorders, as by diet, for example. But our people as a whole have continued to look upon chemistry as a kind of necromancy. We got coal-tar dyes and optical glass from Germany, as she specialized in these. We got potash salts from the soil from Germany, because that country was blessed with rich deposits by nature and they were easily available. We possessed the necessary raw materials and ways for fabricating them. Capital and its interest were lacking. Capital, well advised or with luck, invested and gained thereby. More frequently capital, without advice or illy advised, big and small, invested in fore-ordained failures. Once bitten, future avoidance was natural.

We were deprived of some of the customary articles, products of the chemists' legerdemain, shortly after the war began. Capital ventured in somewhat. A campaign of education, which, commercially speaking, is advertising, in the form of a chemical exposition, was inaugurated in 1915.

As the duration of the war was prolonged, more capital went in. American-made products in greater diversity, and the machinery employed were displayed. When the United States entered the war the absolute necessity for becoming a self-contained nation was fully realized. Chemicals essential to winning the war are being made on a grand scale. Natural waterfalls have been hitched up, great streams are being harnessed, by-product coke ovens are producing more and more of the raw materials, wasted saw dust is becoming industrial alcohol, and other things which play a big part in making airplanes which photograph the enemy. Hundreds of new and useful things, and many old and useful things formerly made elsewhere, may be actually seen here. To enumerate what is shown would be reading the catalogue of the Exposition, a proceeding of immense interest while studying the exhibit, but one culmination of boredom if attempted here.

The splendidly authoritative address of Dr. Herty, chairman of the Advisory Committee of the Exposition, yesterday touched the high points. A repetition of the authentic financial statistics given by him can add nothing to their impressiveness. A studious contemplation, however, prompts one to consider the necessity of avoiding being led too far in expediency and the necessity of recognizing the importance of things yet to be done.

We were, and are still, for that matter, wasting untold wealth in the luxuriant enjoyment of our abundant natural resources. The wastes incident to the production of one good piece of lumber are many times more valuable. The utilization of our coal dumps and mine wastes, in conjunction with a few dams to increase hydro-electric power, would release the necessary fuel for ocean transportation, supply energy to run our factories, and keep us warm in the winter.

Now to met these responsibilities it is absolutely essential to train chemical reserves, not alone for war purposes, but for the industries. To do this it is again "absolutely necessary" to leave enough properly qualified men in the colleges and universities and to select the men and women, who give promise as teachers and researchers, and have them concentrate more than ever along these lines.

The tentative curriculum in chemistry and chemical engineering of the newly established Students Army Training Corps gives evidence of the purpose and the newly organized chemical warfare service of the national army is helping, but an Americanized human factor enters in, which has yet to be evaluated. Red blooded young men, as good teachers or doing splendid work in the industries, do not like to be forced to explain why they are not in uniform. We cannot blame them. They deserve suitable recognition, for they "carry on" even as the S. O. S. men behind the lines make it possible for the men at the front to repulse the enemy and drive him back. In this connection I shall risk the expression of an opinion in reference to a fundamental principle. While our men behind the line in France are efficient in getting what is needed forward, they are not perfect. Part-time service in the front line would emphasize even more the importance of their work behind the lines. So I feel that part-time service at the front by those further behind the lines here at home would not fail to help. Our President would then not be forced to take such action, wise as it was well taken recently at Bridgeport. Some of the shipyard and clothing maker problems would disappear.

What has just been said on first consideration may not appear to be germane to the subject. However, I mention the opinion that it does not fail to bear upon it, for, perhaps, the most pronounced feature of the development of the chemical industry in the United States since July, 1914, has been the spirit associated with its development. It has been active as shown by the part played by the American chemist and reactive on the part of the American public in recognizing the American chemist in his work for American welfare.

The government has shown its deep interest in these expositions, "time keepers of progress," as President McKinley once said. While many thousand chemists and engineers from all over our country and Canada are here to note the technical details of progress, the exhibits are so displayed and illustrated by popular lectures that "the man of the street" can gain a conception of the marvelous progress made by the chemical industry in the United States since July, 1914.

CHARLES F. ROTH

Photo, Underwood & Underwood

Co-Manager of the Exposition of Chemical Industries.

"BUFLOKAST" "BUFLOVAK"

Chemical Apparatus, Vacuum Dryers, Evaporators

Preparing for the Future

While the winning of the war must have precedence, regardless of cost, over every other consideration, we must look forward today to that period of serious readjustment which will inevitably come when peace is established. While we are devoting our energies to the immediate task of helping to win the war, we are looking to the future and preparing, wherever possible, to assist in the development and expansion of the chemcal and allied industries.

It has been well said that the chemical industry cannot develop any faster than reliable manufacturers can develop new machinery. With this in view, we have recently completed at considerable expense our new Research Laboratories, which we believe are admirably equipped for lending assistance in working out new processes of manufacture, the utilization of new raw materials, the recovery and use of valuable by-products, etc.

Machining Fusion Kettles—Note height and width of riser.

In the last issue were shown illustrations of the various chemical and mechanical testing sections in the Research Laboratories, and describing certain processes of manufacture in producing "Buflokast" and "Buflovak" apparatus. This week we take up certain foundry and other methods having an important bearing on this work.

Pouring Casting on end in Foundry.

Casting for Special Evaporator being machined on horizontal floor boring machine.

Pouring Castings on End With Risers

These cuts illustrate the method of making castings with large risers, which insure clean, sound, dense castings free from blow holes, impurities, etc. The upper illustration shows a casting being poured on end with a riser at the top. On the left is shown a fusion kettle cast with a large riser. On a similar kettle being machined the riser has been removed.

The pouring of castings on end is one of the methods used for obtaining castings of sufficient high quality for our apparatus. The pressure in the mold, due to the high head of liquid metal, produces a very dense close-grained iron. Special methods of gating and pouring cause impurities to come to the top in the riser, which is later removed. The lower cut shows a riser being cut off a drum.

Agitator and Shaft for Fusion Kettle—Cast in one piece. Note twist in arms.

Machining Hough Type Nitrator Body on Planer.

Machining Facilities

The cuts on the left illustrate our exceptional facilities, in size and flexibility, for machining large castings and apparatus. Our machine shops are equipped with the largest and most up-to-date appliances for turning out work accurately and with dispatch.

Cutting Riser off Drum Casting.

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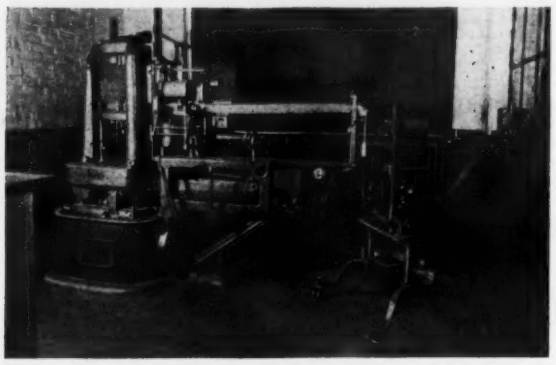


Physical Testing Machine and Micro-photographic outfit used in Metallurgical Laboratory.

Laboratory Control in the Foundry

All materials used in the manufacture of "Buflokast" and "Buflovak" products are chemically analyzed in our metallurgical laboratory, and all finished products are carefully checked chemically and physically, and also examined microscopically by means of the micro-photographic camera contained in our physical testing laboratory.

A part of the equipment in the metallurgical laboratory consists of a small cupola or melting furnace, which enables our metallurgists to make actual samples of the various metal mixtures required, which is a decided advantage over the common method of making foundry metal mixtures and trusting to luck that the metal in the casting will be suitable for the purpose.

Metallurgical Laboratory—Cupola or Melting Furnace used for making Laboratory metal mixtures.

Air Furnace

This is used for producing many of the special qualities of metal used in the manufacture of our various lines.

A mark similar to the one illustrated is placed on castings having special qualities of metal, and a careful record is made of the same. This enables us to identify the metal mixture used in any casting for the purpose of duplicating the same at any future time.

Air Furnace.

A Few "Buflokast" Qualities

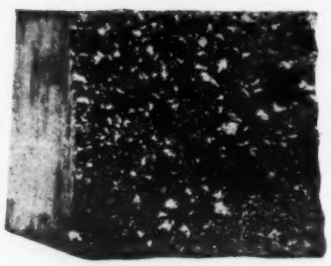
These cuts indicate a few of the various qualities produced in castings for "Buflokast" and "Buflovak" apparatus. The spring, which is 19 inches long in normal position, was cut from a solid bar of cast iron. It can be compressed to two inches, as shown, or pulled out, without breaking, to double its normal length, indicating an unusual ductility.

The cast iron bar was cast square and straight and then twisted as shown, indicating a high tensile quality in the metal. These tests have always been considered impossible on cast iron.

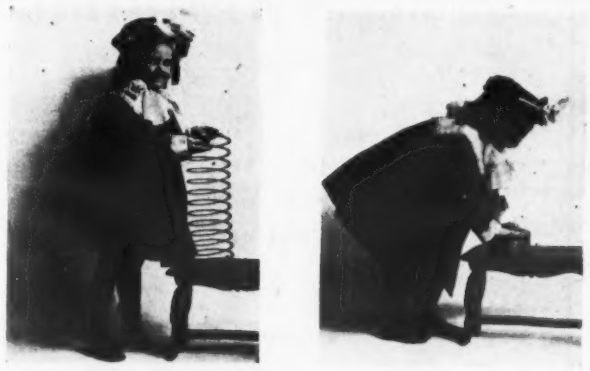
The cast iron sections at the left show a porous open-grain metal and a dense close-grain metal, each having its proper place in the manufacture of our products.

All the above and other qualities of metal are made possible by the system of laboratory control established over our various manufacturing processes.

Example of mark placed on castings for future identification.



Open-grain Cast Iron.



Cast Iron Spring—open and closed.

Close-grain Cast Iron.

Cast Iron Bar—twisted after being cast.

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Development in Nitric Acid Manufacture in the United States Since 1914.

By E. J. PRANKE.

American Cyanamid Company, New York.

The production of nitric acid in 1914 according to the census of manufacturers, was 78,589 tons of nitric acid of average strength, and 112,124 tons of mixed acid. According to other data given in the census, these figures represent about 89 000 tons of 100 per cent. nitric acid. All of this acid was produced from nitrate of soda,. consuming about 160,000 tons of nitrate. The pre-war importation of nitrate of soda amounted to about 560,000 tons per annum; hence the normal consumption for purposes other than the manufacture of nitric acid was about 400,000 tons.

The present rate of importation is about 1,600,000 tons of nitrate per annum. Since very little is going into storage and the total consumption for purposes other than nitric acid manufacture has increased but slightly, if at all, it may be estimated that at least 1,000,000 tons of nitrate per annum is being converted into nitric acid at the present time. This is equivalent to 650,000 tons of 100 per cent. nitric acid, of which nearly five-sixths is being used for the manufacture of military explosives.

The building of the new nitrate of soda acid plants has offered an excellent opportunity for the introduction of many improvements. The Dutch ovens under the retorts have been displaced by modern fire boxes provided with a proper arch. This change has effected a saving in coal consumption of approximately 25 per cent. The chemical stoneware from the retorts to the condensers, and the glass condenser tubes, have been displaced by acid-proof, high-silica iron, such as duriron and tantiron. The volvic-ware saucers in the towers have also been displaced by acid-proof iron. The chemical ware from the condensers to the absorption towers, and the glass lines for circulation of acid at the sides and top of the towers, however, are retained. The absorption tower capacity has been increased about 40 per cent. by the addition of more towers. Spiral rings for tower packing have taken the place of the ordinary form of packing.

Changes in Operation.

Important changes have also been made in operation. The average charge of 5,000 pounds of nitrate per retort has been increased to about 7,500 pounds. The retorts, instead of being operated in batches are now operated in rotation. Instead of three runs per retort per day, the usual practice is now two runs per day. Temperatures are also controlled more carefully than in the past.

The result of these improvements is an increase in the amount of nitrogen recovered as acid from an average of about 78-80 per cent. to about 92-94 per cent. of the nitrogen in the nitrate of soda. At the same time the labor requirement has been somewhat decreased.

A good beginning also has been made in the recovery of nitrose gases produced in the various nitration operations. In some of the systems that have been devised, as much as one-half of the fumes are being recovered. The collection of the gases from the many nitration units, however, is still a serious problem. While the aggregate amount of acid that is being recovered is large, it represents a small fraction of the acid gases that are being wasted. In the ordinary nitration operation as carried out at present, about one-tenth or one-twelfth of the nitric acid is wasted in the wash waters, while on an average about one-eighth is lost as fumes, of which one-half is recovered in plants equipped with recovery systems.

Nitric acid by direct combustion of air by the arc process has not had any important development as yet in America. Three small plants, more or less on an experimental scale, have been built in the United States and operated for short periods. The production of these plants thus far has been negligible. The total annual capacity probably does not exceed two or three thousand tons of nitric acid per annum.

Nitric acid by the oxidation of ammonia has received a considerable and important development since the outbreak of the war. In 1914 there were no ammonia-oxidation plants in this country. At the present time there are under construction ammonia oxidation plants with a capacity equal to about 225,000 tons of 100 per cent. nitric acid per annum.

First Commercial Oxidation Plant.

The first commercial-sized oxidation plant was established in July, 1916, at the ammo-phos works of the American Cyanamid Company, at Warners, New Jersey. Six catalyzer units were installed, each with a presumed capacity of 14 pounds nitric acid per hour. Improvements in the design of the catalyzer and in methods of operation have brought the capacity to over 40 pounds of nitric acid per hour. The catalyzer used is a single fine platinum gauze, with an area of about two square feet, electrically heated. Over a period of two years two of these units have supplied the nitric requirements of the 60,000-ton sulphuric acid chamber plant at this works. The ammonia is taken directly from cyanamid autoclaves, producing about 30 tons of ammonia gas per day, used mainly for aqua ammonia manufacture. This plant has served for several months as a training school for the instruction of operatives for the government cyanamid-nitrates plants. As an example of the normal operation of the catalyzers on ammonia taken directly from the autoclave mains, the following is quoted verbatim from the records for the week, July 13 to 19, 1918. Each value is the average of determinations of two chemists working independently, with the exception of those marked (*), which are determinations of one chemist only—

Catalyzer No. 5			Catalyzer No. 6		
July.	Time.	Efficiency.	July.	Time.	Efficiency.
13...	2.35 am.	96.2	13...	5.30 am.	90.0
	8.40 am.	98.5		1.10 pm.	93.0
	5.20 pm.	93.1		8.40 pm.	93.4
	11.50 pm.	96.0	14...	2.50 am.	93.0
14...	5.50 am.	97.4		1.00 pm.	94.2
	5.10 pm.	94.8		10.15 pm.	93.2
15...	10.35 am.	95.0	15...	8.15 am.	95.6
	5.15 pm.	95.8		2.30 pm.	90.7
16...	1.50 am.	95.4		11.50 pm.	92.6
	11.20 am.	95.4	16...	8.00 am.	90.0
17...	1.10 am.	92.1		8.25 pm.	*93.0
	1.00 pm.	92.3	17...	9.30 am.	90.9
18...	12.50 am.	93.4		8.20 pm.	94.0
	10.55 am.	92.6	18...	7.40 am.	92.0
	8.00 pm.	91.9		5.10 pm.	*91.6
19...	9.50 am.	93.6	19...	4.15 am.	93.0
Aver. for week		94.5			92.5

The Cyanamid-Nitrates plant, at Mussel Shoals, Alabama, will use the electrically heated single gauze catalyzer. It will produce approximately 90,000 tons of 100 per cent. nitrate acid per annum. The plant is expected to go into operation about November 1. The Cyanamid-Nitrates plant, near Cincinnati, and the one near Toledo, Ohio, will also use the same process, each producing at one-half the above rate. They are expected to be in operation early next spring.

Government Nitrate Plant No. 1.

The Government experimental plant at Sheffield, Alabama, known as Nitrate Plant No. 1, which will make about 15,000 tons of nitric acid per annum, has adopted a non-electrically heated multiple screen, consisting of several layers of platinum gauze, welded together at points, and rolled into the form of a cylinder. The ammonia-air mixture flows outwards through the screen at a rate several times as fast as with the electrically heated single screen. After the oxidation has been started by external application of heat the temperature is self-sustaining from the heat of reaction.

In view of the perfect control obtainable with electrical heating, the cost of the electric energy consumed, amounting to about one-third of one ner cent. of the present market value of the nitric acid, may be regarded as negligible. As to the single versus the multiple screen the efficiencies cited above as examples of normal operation of electrically heated single screens are believed to represent the highest standards yet attained in the practical operation of ammonia catalyzers.

It is understood that the Semet Solway Company has an ammonia oxidation plant at Syracuse, N. Y., using the multiple screen without electrical heating. This plant is producing several tons of sodium nitrite per day. Information regarding efficiencies is not available.

In addition to the plants above mentioned the Navy Department, about two months ago decided to build a plant at Indian Head, Maryland, for fixing nitrogen by the modified Haber process used at Plant No. 1. All the ammonia produced will be oxidized to nitric acid, yielding about 30,000 tons per annum.

Considerable work is also being done on the use of catalyzers to hasten the conversion of the nitrose gases, obtained from the catalyzers, into nitric acid. The object is to reduce the amount of space required for reaction chambers. The experiments along this line show promise of early success.

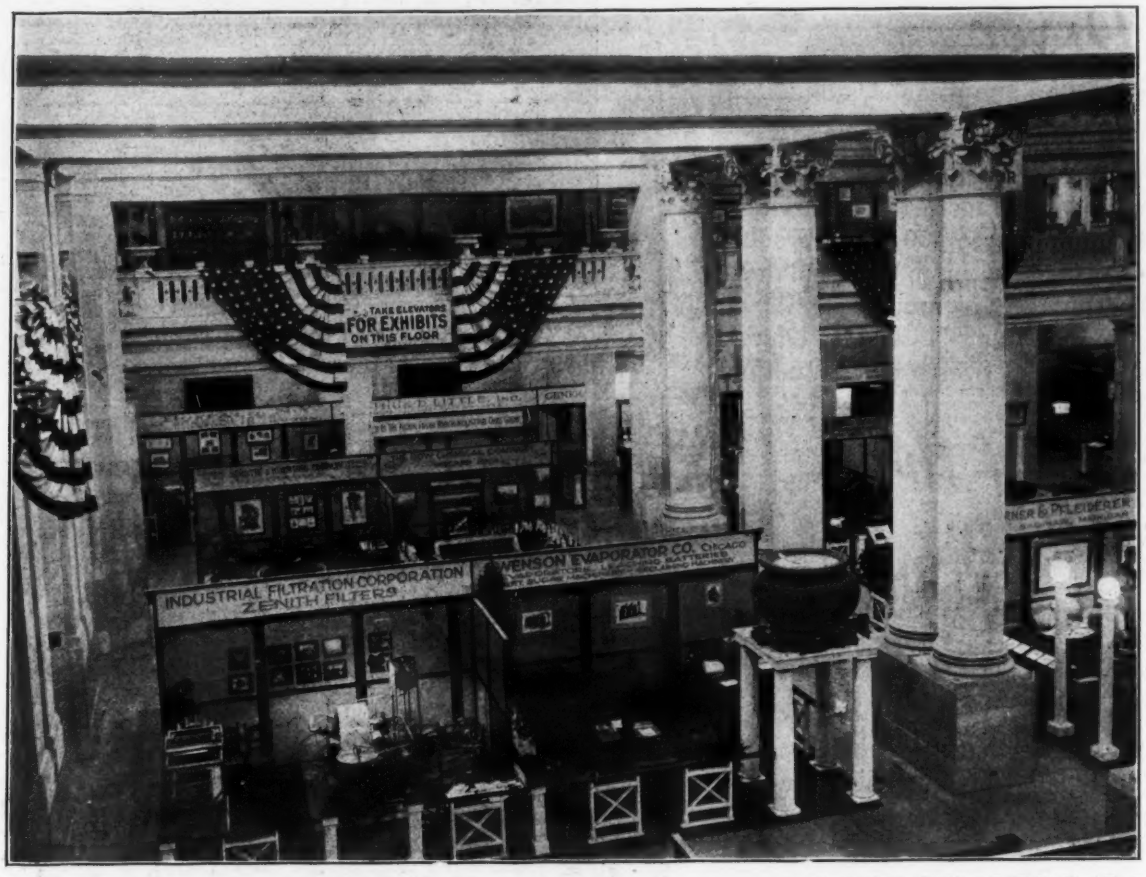
875,000 Tons by 1919.

The nitric acid producing rate in the spring of 1919 will be about 650,000 tons from nitrate of soda and about 225,000 tons by oxidation of ammonia obtained from the air, a total of 875,000 tons of 100 per cent. nitric acid. This is about nine times the pre-war normal consumption. In 1914 the industrial explosives industry consumed about 50,000 tons per annum, while all other uses took only about 40,000 tons. The only notable increase in consuming ability since 1914, aside from military explosives, has been in the dye industry. In 1917 it was estimated that 30,000 tons of dyes were produced in America, equal to the total 1914 consumption. The production will probably increase somewhat further, but at most could hardly consume more than 30,000 or 40,000 tons of concentrated nitric acid. With a producing rate of 825,000 tons and a consuming ability in peace times of 125,000, or possibly 150,000 tons, it is evident that over four-fifths of the nitric acid producing capacity will have to be shut down as soon as peace conditions are established.

Ammonia Oxidation.

The successful development of the ammonia oxidation process raises the question whether this may not become the principal source of nitric acid in the future. While a categorical statement cannot be made some of the major factors may at least be pointed out. The cost of converting nitrate of soda to concentrated nitric acid is just about equal to the cost of converting autoclave ammonia gas to concentrated nitric acid, interest and depreciation included in both cases. Ammonia gas, however, is a cheaper form of nitrogen than is nitrate of soda. It is cheaper by the amount of sulphuric acid required to fix the ammonia gas in the form of sulphate of ammonia. For nitrate of soda and sulphate of ammonia in the past have always sold at about the same price per pound of nitrogen. They will probably be sold on a competitive basis after the war, or if there is any difference the ammonium form will probably be the cheaper. The differential between ammonia gas and sulphate of ammonia, then, will make a difference of about 15 to 20 per cent. in the cost of the nitric acid, in favor of ammonia oxidation. The fact that the nitrate of soda acid plants are being amortized during the war, and are conveniently located for peace-time industrial uses, while new ammonia oxidation plants would have to be built at these same points in order to avoid transporting acid, is relatively not very important, because the interest and depreciation charge saved by amortization of the nitrate of soda acid plants is only about 4 per cent. of the normal cost of the acid. The decisive factor will probably be simply the question whether the difference in cost of acid by the two processes is a sufficient incentive to overcome the inertia of human nature against changing exising practices.

THE MELTING POT OF INDUSTRIAL CHEMISTRY, A GOLD-TOPPED SYMBOL.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SWENSON EVAPORATOR CO. CHICAGO

Photographs by William G. Kelly, New York.

Developments in Manufactur of Glass-Enamelled Apparatus.

EMERSON P. POSTE.

Elyria Enamelled Products Company.

"Developments in the Manufacture of Glass Enamelled Apparatus," was the title of the address delivered in a most interesting manner by Emerson P. Poste, who was the third and last speaker of the afternoon. Mr. Poste illustrated his talk with lantern slides, showing charts containing chemical formulae, as well as some interesting photographs of industrial operations in plants producing enamelled ware. He had a number of samples of enamel in both crude and finished form, and of articles to which the enamel had been applied. Through a misunderstanding of the officers of the exposition no arrangements had been made to have the room dark to allow Mr. Poste to show his lantern slides and as a result his talk was interrupted for a brief period, while workmen nailed curtains across the windows of the conference room. Mr. Poste said in part as follows:—

The field of enameling includes enamels applied to steel and those applied to cast iron. Under the former heading we have cooking ware, signs and other miscellaneous pieces and apparatus used for large scale food preparation and the chemical industries. Cast iron includes sanitary ware, various stove parts and other decorative pieces and apparatus for chemical and pharmaceutical purposes.

In the preparation of an enamel various raw materials, such as feldspar, borax, soda, cryolite and fluorspar, are used, forming the basis of the mixture. Various colors are produced by the use of cobalt, manganese and other coloring oxides, some of which are added in the original mix, and others are added in the mill.

These raw materials are thoroughly mixed and placed in a hot smelting furnace, where the materials are melted together and drawn out into a tank of water and granulated. The product is called "frit."

This frit is ground either wet by placing in pebble mill with water, clay and other mill additions, or ground in a dry mill for application by the dry process.

The steelware to which the enamel is to be applied is manufactured either by pressing, drawing, spinning or welding, the cast iron casting in the usual manner. Whatever the manner of preparation or the nature of the piece, the surface to which the enamel is to be applied must be clean. This is accomplished either by pickling or sandblasting, depending upon the size of the piece.

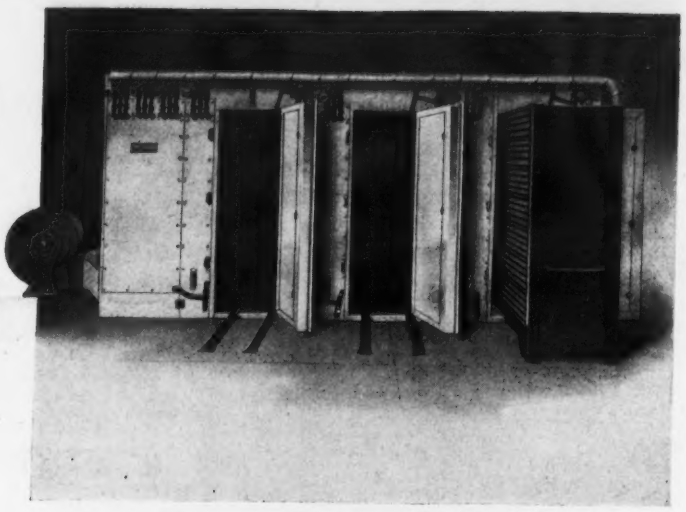
The application of the enamel by the dry process on cast iron involves the spraying of a preliminary ground coat which, when dry, is placed in the furnace and withdrawn at a red heat. The dry powder is dusted on, the piece put back in the furnace, the enamel melted down, the piece withdrawn, more enamel added, and so on until the sufficient coat is built up.

In the wet process the enamel, after drawing from the wet mill, is treated with electrolytes to make a proper consistency for spraying or other method of application. The piece is then either dipped in the enamel, the enamel poured over or sprayed on, depending upon the size and shape of the piece.

In the burning of the ware two general types of furnaces are used, direct fire and the muffle. The latter is more general in connection with cooking ware and smaller pieces, while the former is used on some of the larger pieces for chemical work and large scale food preparation. In either case the burning of the enamel consists of melting down the individual particles and fusing them together in the form of a continuous coating.

Apparatus made in accordance with the above general outline ranges from 50-gallon to 4,500-gallon units in steel and from 2-gallon to 300-gallon in cast iron. The former line finds application primarily in the dairy, canning and other food industries. Units are also used as storage, evaporating and reaction tanks for chemical processes of a neutral or slightly acid nature. The cast iron equipment is used as above and in addition for the most severe chemical conditions involving mineral acids.

Gordon Dryers



Standard Type "SC3" Gordon Dryer with Trucks

The Results of the Gordon Dryer

The best barometer of the construction and principles underlying a dryer is the quality of its output and the time required to produce it.

It has been demonstrated time and time again in the drying of chemicals, dyes, colors, explosives and some 400 other products, that Gordon Dryers have accomplished thorough, uniform drying on a prearranged schedule and with unprecedented speed. Reports are reaching us daily of cases where Gordon Dryers are effecting time savings ranging from 50% to 95% over previous methods.

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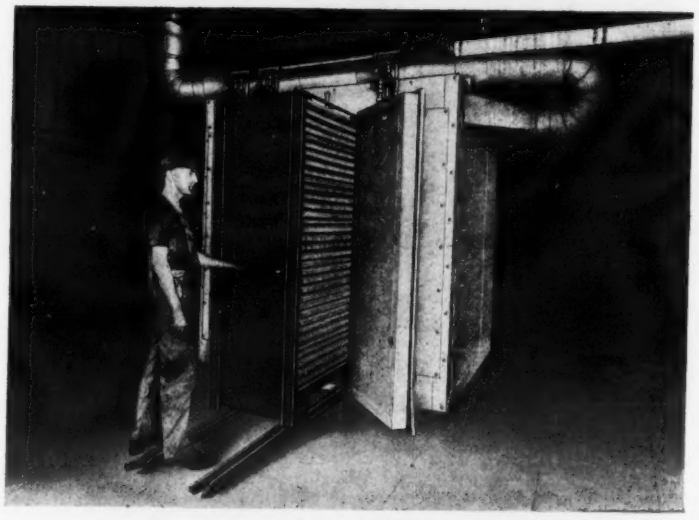
History repeats itself whether it is good or bad, but an order for a dryer doesn't repeat itself unless the dryer has proved good. That is why the sales record of Gordon Dryers, which show 50% repeat business in the past year, is so convincing.

Customers, like the one who says—"We have now had in operation for some weeks the Gordon Dryer you installed for us. We are drying our colors now in a quarter the time it took us before, although we had what we thought an exceptionally good system"—are making the Gordon record. The Dryer itself made the customers. Our new Catalog No. 5 will show the way.



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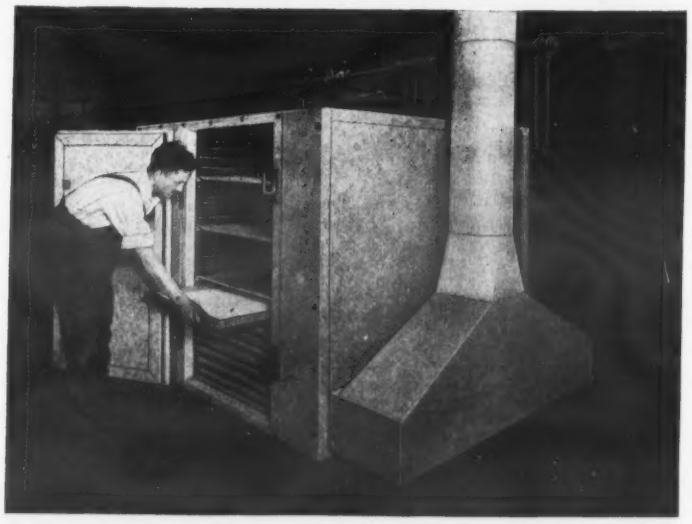

Gordon Standard Type "B" Dryer

WEDNESDAY.

Symposium on Recovery of Potash in the United States.

Four exceptionally interesting and instructive papers dealing with the recovery of potash by various methods in the United States were read in the conference room at Wednesday afternoon's symposium, which was devoted entirely to "Potash." The audience which listened attentively to each paper, several individuals asking questions of the speakers at the conclusion of their reading, was the largest of the week up to that day, many being forced to stand throughout the session as the seating capacity was insufficient. A. D. Little of A. D. Little, Inc., chemists and engineers of Cambridge, Mass., presided as chairman of the day. Those who read papers were Dr. C. A. Higgins of the Hercules Powder Company, whose subject was "Recovery of Potash from Kelp;" Linn Bradley of the Research Corporation, who told of "Recovery of Potash from Irom Blast Furnaces and Cement Kilns by Electrical Precipitation;" John W. Hornsey on "Potash from Desert Lakes and Alunite;" and Alfred de Ropp, Jr., of the American Trona Corporation, on "Potash from Searles Lake."

A. D. Little.

Mr. Little's remarks were comparatively brief, he stating that he did not feel it incumbent upon him to make any long drawn out remarks as the audience had come to hear men familiar with the development of potash in this country and he did not, therefore, propose to delay their pleasure. He spoke briefly of the many great engineering problems in a chemical way which had had to be overcome by the chemical industry of the United States since the start of the war in Europe and of the great success with which the efforts of American industry had been rewarded, promising that even greater rewards lay in store for the future if all will keep their shoulder to the wheel to make the American chemical industry thoroughly self-contained one and independent in every way of all foreign assistance. He pointed out that this country has the necessary raw materials for almost every line of chemicals in use with the possible exception of nitrate of soda and one or two others. Mr. Little then told of the great need of the country for potash and the many difficulties which have been overcome in meeting the requirements of the nation's agricultural and industrial needs. Dr. Higgins was then called upon for his paper.

Recovery of Potash from Kelp.

By C. A. HIGGINS.

Hercules Powder Co.

The recovery of potash from kelp and the ultilization of kelp ashes, principally as a fertilizer, is an art that has long been practiced. Many centuries before the German Syndicate began to market potash salts from the Stassfurt mines the crofters around the rocky shores of Scotland and the northern coast of France had burned the drift kelp as a fuel and scattered the ashes over their land as a fertilizer. The great success which resulted caused a rapid expansion in the business of kelp harvesting, until about the beginning of the nineteenth century quite a flourishing industry had already sprung up.

The opening up of the German potash mines, however, about the middle of the nineteenth century, began to flood the market with potash at a price far below that at which the old kelp burners could produce it, and although the kelp potash industry still struggled along in isolated parts of the coast amongst the Scottish crofters and to some extent in Japan, it may be said that the German production killed the kelp industry, which had up to that time attained fairly considerable proportions.

New Sources of Supply.

The outbreak of the present war, however, drove potash users to look for new sources of supply, and naturally one of the first to come to their attention was kelp. Previous to the outbreak of the war many writers had drawn attention to the huge perennial beds of kelp which grow practically uninterrupted all along our coastal waters on the Pacific side, from the Mexican line to Alaska, and around the scattered groups of islands which lie close to the California shore. These vast fields of kelp seem to offer inexhaustible supplies of potash, which according to the preliminary survey made by the government, bade fair to supply far more than the normal requirements of our country for the indispensable muriate of potash. All that remained was to devise economical means for harvesting these vast beds and drying and reducing the kelp to a suitable condition for transportation and use as a fertilizer. Within a few months, therefore, of the cutting off of the German muriate, various large companies were prospecting the Pacific coast for suitable sites on which to erect plants for the harvesting and extraction of potash from the Pacific kelp.

Crude Attempts.

The earliest attempts at harvesting were very crude and involved a good deal of manual labor. Men in flat bottom scows would reap the weed by hand with large sickle knives and burn it in a rather primitive way. The ash was afterwards sold to the big fertilizer companies at a price based upon the potash content, which generally ranged around 15 per cent. K20.

Later, however, modern methods were installed for the harvesting of the kelp. Large flat bottom, steam or gasoline propelled scows were equipped with a mechanical reaping device and band conveyors which cut the kelp and conveyed it in one operation into the tanks aboard the harvesting vessel at very much less expense than that involved in the old methods of hand cutting. These harvesters, when filled, then proceeded to shore under their own power and discharged their contents into hoppers at the plant, which in turn fed series of mechanical dryers, where the kelp leaves were dried and partly incinerated by passage through revolving drums heated by oil burners. The dried incinerated kelp leaves were then ground and sacked and ready to be shipped to the fertilizer factory.

Drying Process.

Some attention is paid in the drying process to insure that a minimum of the potash and nitrogen content of the kelp is lost by the destructive distillation effect of the drying equipment. That, briefly, is the method now in use in plants where potash is considered as the only valuable constituent of the kelp. Experience has shown, however, that this process of producing potash and realizing the values of kelp is very expensive, and will exist possibly just so long as the war and the present high price of potash last.

A few figures will show the status of the kelp ash industry in this regard. Using the modern harvesting methods that I have already briefly touched upon, experience shows that it costs around $1.10 to harvest and bring a ton of kelp leaves ashore. Analyses show that the average potash content of the raw kelp as harvested in California coastal waters is about 1.3 per cent. K20, which means that it costs about $85 to bring in the green kelp equivalent to 2,000 pounds 100 per cent. K20. On top of this, of course, has to be added the costs of drying these kelp leaves, which contain about 90 per cent. of moisture, and by reason of their gelatinous and cellular structure, present quite a problem in dessication.

All indications seem to point very clearly to the fact, therefore, that any industry which looks to the production of potash from kelp on a permanent peacetime basis, must reduce its costs very considerably, or products valuable by-products in the same process which, in turn, will effect a reduction in the cost of the potash.

Algin Bodies.

Along these lines certain investigators have suggested as far back as a century ago that the peculiar algin bodies present in kelp might be profitably recovered and used in certain directions in place of gelatin, for the sizing of paper and textiles, the proofing of cloth, and in the production of rubber substitutes and admixtures. Another interesting suggestion is that of Prof. T. C. Frye, who made a conserve by first leaching out the potash and soluble salts and afterwards soaking the kelp in cane sugar solution flavored with lemon. In Japan a kind of sour pickle with vinegar is made from the fleshy parts of the kelp. The kelp fiber when compressed and dried also forms a hard substance resembling aconite or vulcanized fiber, and at least one concern is working along these lines at the present time. The production of by-product iodine from kelp, however, has long been a practical proposition, although hampered somewhat by the competition of by-product iodine from the Chilean nitrate field.

The biggest practical advance in the economical production of potash from kelp was marked in the year 1915, when the Hercules Powder Company started the construction of large gasoline propelled marine kelp harvesters and a factory located near San Diego, Cal. This equipment was designed primarily for the production of acetone, potash and iodine from kelp. Kelp as a source of acetone was something entirely new to chemical industry, and chemists all over the world have watched the growth and development of the undertaking with great interest. The plant since its inception has rapidly increased the number and range of its products, and placed upon the market some new materials which are full of industrial promise.

Reduced to its simplest terms, the basic principle of this process of kelp reduction lies in the destruction of the cellular tissue of the kelp leaf by fermentation, bringing the potash into solution, and producing acetic acid as the product of the fermentation of the kelp leaf. The acetic acid is neutralized with limestone, giving calcium acetate, potash and iodides in the solution.

By a general products chart Mr. Higgins gave a general idea of the operations vested and brought to the plant, pumped at this plant. With this I think we can outline quite clearly the principal steps involved and the products produced in the fermentation of kelp. The kelp is harvested and brought to the plant, pumped from the tank barges into the fermentation vats where it is allowed to ferment until the kelp leaf goes into solution and a liquor is obtained which on evaporation and concentration yields, at various stages, three intermediate salts.

The first intermediate salt, consisting of a mixture of acetate of lime and muriate of potash, is heated in regular acetone retorts, which produce acetone from the acetate, leaving as residue muriate of potash and calcium carbonate, from which the high grade muriate is separated by leaching and subsequent crystallization. The fractionation of the crude acetone yields a certain amount of light and heavy acetone oils, in addition to the C. P. acetone.

Intermediate salt No. 2, consisting of the calcium salts of the higher fatty acids, is mixed with alcohol and sulphuric acid and the corresponding ethyl esters produced by the well-known methods. These esters are easily separated by fractionation. Ethyl acetate, ethyl propionate and ethyl butyrate in commercial quantities are now on the market from this source and are finding very extensive application as solvents in the soluble cotton industry in the manufacture of artificial leather, etc.

Intermediates.

Intermediate salt No. 3, consisting principally of potassium iodide, is treated with chlorine and the precipitated iodine dried and resublimed.

The last of the final products shown on the chart is algin. This substance is at the present time being produced from the residual unfermented leaves which are screened from the fermentation vats. These leaves are treated with sodium carbonate, which extracts the algin in the form of a soluble sodium salt which is afterwards precipitated and purified. So far, but litle progress has been made in the commercial development of the use of this algin as an article of commerce. The perfection of extraction manufacturing methods, however, and the increasing cost of gelatin and vegetable gums, leads to the conclusion that this material may find a very extensive use in the future.

In addition to the foregoing, valuable products promising experiments are now in hand whereby ammonia, valeric and caproic acids are being recovered as by-products in the fermentation of kelp. Nitrogen, combined as ammonia, exists to the extent of about .2 per cent. in kelp, and is left in the liquor after fermentation of the leaf. Valeric acid is the form much needed at the present time in the treatment of nervous disorders, the supply of the valerian root from which the medicinal valerates were formerly made having been almost entirely cut off.

Fine Chemicals from Kelp.

Sufficient has been said, I think, to indicate that the kelp industry, from being conceived solely as a source of fertilizer potash, will eventually develop along the lines of fine chemicals with high grade muriate somewhat in the position of a by-product. It is doubtful whether the total potash production of all the kelp harvesting concerns, at the present time, amounts to more than about 25 tons a day on the basis of 80 per cent. muriate of potash. Of this, more than a half is of a high grade of purity, about 95 per cent. KCl, and is produced not by the original method involving the incineration of the kelp, but by the fermentation process already referred to.

It may be a little early yet to speak definitely of the future of the kelp industry and its future bearing on potash. Certain it is that with kelp reduction factories extending all along the Pacific coast that our domestic demands for potash cannot be met thereby. Certain it is, too, that kelp solely as a source of potash will never compete with unrestricted supplies from Europe or even with that recovered in modern cement or blast furnace practice.

The utilization of kelp in such a way, however, as to realize on all the other possible values of kelp, some of which we have touched upon within the brief limits of this paper, may help to render the users of high grade potash for chemical purposes outside of the fertilizer trade independent of foreign supplies.

FREDERICK E. BREITHUT

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Major, Chemical Warfare Service, U. S. A., Chief of Personnel; in Charge of Service Activities at Chemical Exposition.

F. W. PAYNE

Photo, Underwood & Underwood

Co-Manager of the Exposition of Chemical Industries

Recovery of Potash from Iron Blast Furnaces and Cement Kilns by Electrical Precipitation.

By LINN BRADLEY.

Research Corporation.

The subject of potash recovery is becoming of more universal interest to the public as well as to the technical men. The daily press and the magazines frequently refer to what is being done, and recently several news items and editorials have appeared in the metropolitan press

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Eagle Carmesine B
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Eagle Bismarck R
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Eagle Acid Brown G
Eagle Acid Brown R
Eagle Royal Purple B 2
Eagle Violet 4BX
Eagle Acid Black
Eagle Fast Rose
Eagle Victoria Yellow
Eagle Acid Yellow
Eagle Crocein Orange
Eagle Victoria Green
Eagle Acid Magenta B
Eagle Fast Acid Green
Eagle Indigotine
Eagle Acid Navy Blue
Eagle Methylene Blue
Eagle Turquoise Blue

DYES FOR COTTON
COLOR
Eagle Direct Black
Eagle Direct Congo Red
Eagle Direct Pink
Eagle Direct Blue
Eagle Direct Violet
Direct Chrysamine Yellow
Eagle Direct Green W. T
Eagle Direct Brown
Eagle Direct Fast Yellow
Eagle Direct Navy Blue
Eagle Direct Sky Blue
Eagle Methyl Violet
Eagle Bismarck Brown R
Eagle Bismarck Brown Y
Eagle Chrysoidine R
Eagle Methylene Blue
Benzo Purpurine 4B
Eagle Direct Corinth
Eagle Direct Orange W B
Eagle Direct Salmon Red
Eagle Direct Tan
Eagle Neutral Gray
Eagle Direct Fast Scarlet
Methyl Violet Crystals
Eagle Turquoise Blue

DYES FOR SILK
COLOR
Eagle Ponceau Red
Eagle Scarlet II R
Eagle Naphthol Green W
Eagle Orange II
Eagle Fast Bordeau
Eagle Carmesine B
Eagle Dark Claret
Eagle Bismarck R
Eagle Bismarck Y
Eagle Acid Brown G
Eagle Acid Brown R
Eagle Royal Purple 2 B
Eagle Violet 4BX
Eagle Acid Black
Eagle Fast Rose
Eagle Victoria Yellow
Eagle Acid Yellow
Eagle Fast Acid Pink
Eagle Victoria Green
Eagle Acid Magenta B
Eagle Fast Acid Green
Eagle Indigotine
Eagle Acid Navy Blue
Eagle Methylene Blue
Eagle Scarlet R

FOOD COLORS
Eagle Raspberry Red
Eagle Claret Red
Eagle Brilliant Red
Eagle Cherry Red
Eagle Brilliant Orange
Eagle Lemon Yellow
Eagle Apple Green
Eagle Olive Green
Eagle Turquoise Blue
Eagle Deep Sky Blue
Eagle Ultramarine Blue
Eagle Royal Violet
Eagle Plum Purple
Eagle Nut Brown
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Eagle Solid Logwood Extract

LEATHER DYES
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Eagle " Blue Black
Eagle " Blue
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Eagle " Blue Black
Eagle " Blue
Eagle Leather Brown red shade
Eagle " " yellow shade
Eagle " Blue
Eagle " Purple

FELT HAT DYES
Eagle Light Blue
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Samples of all the above will be gladly furnished. C.i.f. prices to foreign ports furnished on request. Full dye formulas and instructions with each dye. Each tin carries a face label, showing the name of the dye and net contents and also a back label on which can be printed the name of the local distributor. Description and name of dye can be printed in any language.

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calling our attention to what is being accomplished in England toward making their country independent of Germany.

It appears that the British Government has furnished large sums of money to assist in recovering potash from their iron blast furnace gases, and it is predicted that this source will enauble England to obtain enough potash to equal her entire pre-war importation from Germany. France is reported to be as keenly awake to the possibilities along this line, and we may see the time when France will be recovering large quantities of potash from iron ores which Germany has made such strenuous efforts to control.

However, it is not surprising that interest in potash should increase, when we consider that this is the one big economic weapon which Germany has relied upon to regain her "place in the sun" after the war. She boasts that all countries will have to depend on her for potash. She claims that other countries cannot produce potash to compete with that supplied by Germany. But in this, as in many other instances, her reasoning is based on lack of information as to facts and possibilities.

Recovery of Potash.

The recovery of potash in this country is making rapid strides. The industry may be roughly divided into those plants in which the recovered potash is the main product and those in which the potash is recovered as a by-product. It is believed that while the largest immediate tonnage may be obtained from desert lakes, kelp, alunite and a few other economic problems show that the surest way of making our potash industry a permanent and enduring one, able to supply all of our requirements even against German competition, is to develop and rely upon by-product potash.

After the installation of the Cottrell processes at the plant of the Riverside Portland Cement Company, in California, for eliminating the dust nuisance, it was noticed that the material collected in various parts of the precipitator differed in fineness. Natural inquisitiveness called for an analysis of these products to determine if any impurities in the raw mix had become concentrated in any portion of the dust. The alkalies increased with the fineness of the material as shown by screen analyses.

At that time considerable light fume was escaping from the precipitator exits and the suggestion was made and urged that some of this material be collected and analyzed, as it might show even higher alkali content, since having been interested in agricultural and fertilizer problems it seemed to some of potash might be found in the escaping fume in percentage such as would warrant its recovery. Thus the first commercial potash recovering plant in this country was established. Since that time a number of improvements have been developed and the commercial success of the potash plant at Riverside has been the cause of several other cement factories installing potash recovery plants

Early in 1912 the Research Corporation of New York started to develop the Cottrell processes and apply them to various plants in the eastern portion of the United States. Shortly after work had been begun, a paper was read and a demonstration given at a meeting of the local section of the American Chemical Society, near Allentown, Pa., and arrangements were made for a visit to the South Bethlehem plant of the Bethlehem Steel Company. Having in mind the experiences of the Riverside cement plant, curiosity was aroused by the appearance of the gases coming from the tall brick stack connected to the boilers. An investigation resulted in extensive investigations thereafter to determine the possibility of cleaning these gases by the Cottrell processes and recovering whatever of value could be obtained.

Variation in Content.

Analyses of iron ores, cokes, limestones and dolomites show a wide variation in potash content. Furnaces which produce a large tonnage of slag per ton or iron on account of the iron content of the furnace charge will, of course, carry more potash into the slag than furnaces which produce a relatively small volume, other things being equal. Some iron ores carry as high as 60 per cent. of iron and are practically devoid of potash. Some cokes have a low ash and are low in potash. Some limestones and some dolomite may be quite pure. If, therefore, the ores and uniform and properly prepared and the fuel and flux are properly proportioned, the slag volume will be small and the potash in the bases may likewise be negligigle. The potentialities of the by-product recovery from blast furnaces would seem to surpass the possibilities of the Portland cement industry.

Numerous attempts have been made to recover potash from silicate rocks. The investment and operating cost, especially for fuel, are hard to overcome if one endeavors to recover nothing else; wherefore, it seems best to recover potash from these silicates by heat treatment and to charge these silicates into existing furnaces along with the regular charge and recover the potash as a by-product.

Since the investigations referred to were begun at South Bethlehem, numerous other furnaces have been investigated and potash balances made. Iron ores have been found in abundance in Alabama, which carry from 1 to as high as 3 per cent. in potash, and carry enough iron to make them highly suitable for this purpose.

Investigation Results.

One investigation gave the following summary:—

Total K2O charged into furnace per ton of iron produced, lbs.	64.92
Lost in slag per ton of iron produced, lbs.	11.60
Lost as fume from gas leaks per ton of iron produced (estimated), lbs.	1.16
Total potash recoverable from gases per ton of iron produced, lbs.	52.16
Total potash in dust in gases as per analyses, per cent.	34.11
Water soluble potash in dust in gases as per analyses, per cent.	32.10
Portion of total potash in dust, which is water soluble, per cent.	94.11
Total water soluble potash recoverable per ton of iron by collecting the dust in the fine gases, lbs.	49.09
Total water soluble potash as above per 500 tons iron per day, lbs.	24,545
Total water soluble potash as above per year of 350 days, tons	4,295.37
Portion of total potash charged into furnace which is recoverable from gases in water soluble condition, per cent.	75.62
Safe estimate of above amount recoverable in operating practice, per cent.	80.00
Safe estimate of above amount recoverable as above per year of 350 days, tons	3,436.29

A study of the above figures will show that it is desirable to keep the potash content of the raw materials up to the highest point, and to keep the slag volume and potash content as low as possible.

With suitable slag volume and potash content, and a rich potash charge, the recovery of potash in quantities worth while is readily obtained. Sodium chloride has been found helpful in liberating the potash in such a way that it was recoverable in the dust in a water soluble form. While working at a cupola furnace in which sash weights were made from old tin cans and other metal waste it was found that the use of common salt, sodium chloride, greatly increased the fume volume and density, and this latter was shown to be due to the fact that chlorides of lead, tin and zinc were formed and readily volitilized as such. The use of salt has been extended to cement kiln practice and to other uses in connection with the recovery of silver, lead and zinc from low grade ores and tailings, the values being recovered from the gases after volatilization as chlorides.

Consideration of data presented resulted in an effort being made to find raw materials suitable for making iron and yet carrying high percentages of potash. Samples of ores, fluxes and cokes were obtained from a number of furnaces and other sources, and later on this work was carried on much more extensively by the Bureau of Soils of the Department of Agriculture. Frederick Brown, of that bureau, has now collected data on nearly all of the raw materials available for iron making.

Alabama Ores.

Personal efforts to find materials such as described developed the fact that in the eastern part of Alabama there is a very large tonnage of iron ores carrying in some cases an average of 1 per cent. of potash, and in other instances an average of about 1.80 per cent. of K2O, several analyses showing a content of over 3 per cent. K2O. I have examined these properties and have interviewed blast furnace operators who have used them in their furnaces and hold the opinion that they constitute an asset of importance to the nation as well as to interested parties.

They should receive the consideration of the government in connection with our war problems, and likewise our post-war problems, so as to assist in rendering our country absolutely independent of Germany. The ores carry an average of from 48 per cent. to 52 per cent. of iron, are very uniform, easily mined and shipped, as they are directly on the railroad, and operate satisfactorily in the furnace, producing good iron at low cost. Their potash content also acts as a desulphurizer, thus improving the grade of iron.

Ores as Potash Source.

The following table has been compiled to show the economic importance of these ores as a source of potash, the figures having been based on experience at several other furnaces as well as on the data obtained in connection with these particular ores and at various iron furnaces in the South:—

		Per cent			
			No. 1.	No. 2.	No. 3.
Contents.	Coke.	Stone.	Gray.	Red.	Brown.
Silica (SiO_2)	8.70	2.00	19.2	15.0	19.5
Alumina (Al_2O_3)	5.00	1.00	4.6	4.0	3.8
Lime (CaO) (H_2O)	.30	53.00	1.3	17.0	6.0
Potash (K_2O)	.30	.30	1.8	.2	.2
Iron (Fe)	1.70	0.00	49.8	36.0	42.0
		No. 1.		No. 2.	No. 3.
Ore required for one ton iron, lbs.		4,398		6,039	5,212
Percentage of burden		46.07		54.35	46.87
Coke required for one ton iron, lbs.		2,700		3,900	3,000
Percentage of burden		28.29		35.22	26.98
Stone required for one ton iron, lbs		2,448		1,159	2,909
Percentage of burden		25.64		10.43	25.15
Total potash content of burden per ton iron, lbs		99.5		29.57	33.97
Deduct for losses in slag and elsewhere		10.4		15.6	14.0
Total potash collectible from gases, lbs.		39.1		13.97	19.97
Slag volume per ton iron, lbs.		2,715		3,290	3,090
Total potash in gases per day (500 tons iron)		44,550		6,985	9,985
Total potash in gases per 350 day year, tons		7,796		1,222	1,747
Assume 80 per cent. recovery, this equals		6,237		978	1,406
Value per annum at $500 per ton of K_2O		$3,118,500		$489,000	$703,000

The total production of pig iron in this country is such that about 200 furnaces of such size as referred to above would be required to meet our requirements if the furnaces were of the same capacity. So it is easy to see that we now have sufficient furnace capacity to produce annually over 1,500,000 tons of potash per annum, far in excess of our pre-war requirements. The difficulty lies in the fact that we have not found that all furnace burdens carry the amount of potash shown under the No. 1 column. If the furnace charges and operations could be adapted so that one-fifth of the amount, or 300,000 tons, could be produced, this would meet our needs without assistance from any other source.

Cement from Slag.

H. E. Brown, a chemical engineer of New York city, has developed a process for making a special cement from the slag obtained from a blast furnace, and at the same time recovering water soluble potash from the gases. The process has been developed to the extent that both potash and the special cement can be produced, but investigations looking to a reduction in the operating cost have not been completed. It appears that with an assured market for the cement at fair prices, the process can be operated successfully and show a good return on the investment.

It is natural to look to feldspar and other potash-bearing silicates for our potash. The cost of mining and grinding feldspar is one obstacle to be overcome, which is not an obstacle, for instance, in the Cambrian slates of Georgia. It has been suggested also that efforts be made to recover potash from the tailing dumps in the Cripple Creek district of Colorado, these tailings carrying as high as 7 per cent. of K_2O. Investigations as to the feasibility of this are now under way.

Serecites and Cambrian potash-bearing slates have been located in Georgia which carry potash in considerable quantity, several deposits analyzing as high as 8 per cent. or 9 per cent. Laboratory investigations have shown that the potash in these raw materials was more readily rendered water soluble or volatilized by treatment with salt in a rotary kiln than the potash from feldspar. The cost of production is much less than in the case of feldspar and the cost of grinding is very much less, and altogether these slates are much better adapted for the purpose here discussed than feldspar is. It is also reported that a company has been treating this material in a rotary kiln, adding 200 to 300 pounds of salt per ton of raw material, volatilizing a good portion of the potash and converting a large percentage of the balance into a water soluble compound in the clinker. Engineers state that cotton grows prolifically on these lands without any additional fertilizer.

Cottrell Process.

In all of the cases mentioned above, potash is volatilized and must be recovered from the gases. The Cottrell process has met with excellent success in this phase of potash recovery problems. Several plants are now in successful operation and at the present time a considerable tonnage is being obtained in this manner. Other plants are under construction.

The Bureau of Soils' survey of cement plants indicates that the cement industry can be counted on to furnish 80,000 to 100,000 tons of potash annually. By using materials which are higher in potash content, such as feldspar, serecite or slate in part, the yield of potash can be materially increased. The utilization of existing cement kilns and equipment for the manufacture of cement as a by-product, placing special emphasis on the potash yield and profits therefrom, should be urged by all citizens, and this should be more emphatically urged for the recovery of potash from blast furnace gases. The feat of obtaining all of our potash from existing industries by recovering the by-products will be typically American and worthy of our "Yankee ingenuity."

The by-product method will enable us to compete with potash from any other source, and the Kaiser's vain boasts that all countries will be compelled to submit to his will because they must have his potash shall receive their proper answer. It is not difficult to recall that the by-products of our packing house industries constitute the source of a large tonnage of our fertilizers, whereas a few years ago these materials were annoying left-overs, difficult to dispose of.

Referring again to the iron industry and its relation to the potash question, it should be pointed out that in the Alabama district there is an abundance of excellent coal, labor is plentiful and cheap, the climatic conditions are such that the district may be considered an all-year one as far as operating is concerned.

South as Center.

The South produces pig iron cheaper than any other district in normal times. In fact, their furnaces must do this in order to stay in the market. The manufacture of cast iron pipe has grown to a large industry and it is evident that the South is coming into its own very rapidly. The South has a very fortunate combination of labor, raw materials, climate and a large and near fertilizer market.

In France and in Great Britain the national governments have taken an active interest in the possibilities along these lines. It has been reported that investigations, extending over a period of three years, have shown that Great Britain can produce enough potash to satisfy all her requirements. The British Potash Com-

FROM THE BALCONY OF EXHIBITION LOOKING DOWN UPON MAIN FLOOR HALL.

Photographs by William G. Kelly, New York.

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pany, Limited, has recently been organized for this purpose, and the British Government has undertaken to provide at least half of the total capital.

It does not seem that our own government should falter or lag behind in this field, but, on the contrary, should immediately make comprehensive plans and take energetic action to insure the proper solution of the problems under d'scussion. Priorities. labor, material and fuel allocation play an all-important part, and on top of this the new industry is handicapped by having to face an enormous taxation before the plant is fully paid for from earnings, and there is no positive assurance that potash will long remain above the pre-war level. Surely this s.tuation should be corrected promptly.

It seems ridiculous that the United States should be playing the role of food granary for ourselves and our allies, also raising the cotton which is so necessary in connection with the war, and yet nothing is being done to provide the potash either for food purposes or for the cotton, except the limited and inadequate efforts due to private initiative. Potash is a subject which should be understood and appreciated by everyone in the nation, and from the national point of view. Does any one of us imagine that there is such ignorance of potash in Germany as exists among our own citizens?

German Opposition.

Germany will do all within her power after peace is declared to break down that which will have been built up, the same as she has destroyed the beautiful cities of France. She will endeavor to regain control of the potash situation in this country. Even now she probably has her propaganda all prepared and ready to interfere with efforts being made by our technical and business men. Even now we hear rumors to the effect that potash is not a plant food and is not needed for cotton, potatoes and various other crops. Careful investigation of the Southern cotton fields should be convincing that this may be another piece of German propaganda.

It would be to the national interest in the broadest way for this country to take steps to forever exclude every ounce of German potash. Tariff, price control and other methods should be earnestly considered. The farmer must be made to realize that he dare not use German potash even if he might obtain it a little bit cheaper than the local product.

It should be remembered that Germany will continually strive to break down any barriers which may have been erected, and it behooves us to band ourselves together in an alliance which could fittingly be called the American Potash Alliance, and see to it that our interests are at all times being taken care of.

Potash From Desert Lakes and Alunite.

JOHN W. HORNSEY.
Summit, N. J.

The arbitrary action taken by the German Government some years ago in forcing Americans who had purchased interests in German potash works to join the German Potash Syndicate, and the lack of tact displayed by those who handled the situation for Germany, created so much ill feeling that altogether it brought about the determination upon the part of the United States Government and of American buyers, to find some source of potash other than the German, and plans were thereupon made for both governmental and independent searches. Fortunately for this country, when war was declared in 1914 these searches had developed a large amount of valuable data.

Both the Geological Survey and the Bureau of Soils were granted appropriations, and began active work, which has proven to be of considerable value. However, the independent investigators made a somewhat more comprehensive survey without going so exhaustively into details, except where it seemed reasonably certain that a commercially workable supply would be found.

All probable sources of supply were investigated, including feldspar, kelp, desert lakes, leucite and alunite. It was evident from the start that potash could not be produced profitably at anti-war prices from certain of these materials without the production and sale of by-products, and for some of these by-products there was only a limited market. In other cases, a somewhat more careful study of the subject showed that potash was unquestionably the by-product.

This work has, however, definitely resulted in the development of a permanent potash industry in this country, and I say permanent advisedly. Some of the plants will, undoubtedly, be able to continue after the war.

Desert Lakes.

Investigation of many of the lakes of Western deserts showed such percentages of potash as to make it improbable that potash could be produced commercially in competition with Germany at the price then prevailing.

Searles Lake.

However, early in 1912 a company which had acquired control of Searles Lake found that their deposit contained a considerable percentage of potash apparently in the form of chloride. This so-called lake consists of a deposit of crystals, resulting ffrom the evaporation of a prehistoric lake, which was at least 600 feet deep, when it ceaseed to overflow. In the course of time, as evaporation under desert conditions continued, the lower portion of the valley became filled with crystals permeated with a saturated brine. This body of crystals has been exhaustively investigated by the drilling of wells and its limitations are now well known. This crystalline body, averaging 75 feet deep, has an area of 25 square miles. That portion near the edge is covered with mud, but 12½ square miles are uncovered, and here the crystal body is smooth, hard and solid enough to carry any weight. It is, however, not dense but composed of crystals varying in size from, say, ¼-inch cubes, to the equivalent of 4-inch cubes. This mass of crystals is formed with openings and interstices between them, approximating 40 per cent. of the contents of the crystal body.

This intereticial space is filled with a brine saturated with the salts of which the crystals are formed, comprising the chloride of potassium and the carbonate, borate, sulphate and chloride of sodium. As these voids extend throughout the entire crystal body they form unobstructed channels through the deposit, and owing to the well-known principle of the diffusion of salts in solution, the brine is virtually uniform in composition through the entire crystal body. Analyses of many samples taken at widely separated points have given substantially the same result. The following is a typical analysis given in the form of the usual hypothetical combination, but which today, in view of the large amount of work done on this deposit, can hardly be called hypothetical.

$Na_2B_4O_7$—10 H_2O borax	2.92%
Na_2CO_3 soda ash	4.92%
Na Cl common salt	15.84%
Na_2SO_4 sodium sulphate	6.72%
K Cl muriate of potash	4.36%
Total solids	34.76%

Repeated analyses of brine tgken from various parts of the deposit by pumping continuously 24 hours per day for periods of 30 days show that near the center of the deposit the ptotash content calculated as K Cl will gradually increase from about 4.75% to 5.25%. In one case at the end of 30 days it showed 5.40%. Near the edge of the deposit the percentage gradually lowered from about 4.75% to 4.00%.

Potash Percentage.

A composite sample made up of 52 samples of the crystals, taken from widely separated points, and from various depths, showed 5.00% of potash, calculated as K Cl. Obviously, this shows the brine to be saturated with potash, and before its potash content can be lowered by pumping the potash in the crystals will be dissolved.

The average level of the brine is 1 inch below the surface of the crystals, in consequence of which the surface crystals are always wet, and in the intensely hot desert atmosphere this is followed by a very high rate of evaporation, which, in turn, is compensated for by a constant inflow of water from the surrounding mountains entering the crystal body at the bottom and flowing through the valley beneath an impervious clay layer.

The raw material in this case is the brine, and the mining cost is that of pumping. The separation of the various salts is greatly simplified by the differences in their relative solubilities. Potassium chloride and borax are much more soluble in hot water than in cold, while the solubilities of the other salts does not vary greatly with the temperature of the solution.

The question is often raised as to the total tonnage of potash in Searles Lake. It is not difficult to calculate with a greater degree of accuracy than would be possible in most mineral deposits. The following facts are known:—

The deposit covers 25 square miles.

The average depth is 75 feet.

The volume occupied by crystals is 60 per cent.

The volume occupied by brine is 40 per cent.

The weight of one gallon is 10,738 pounds.

The average analysis of the brine shows a potash content of 4.36 per cent.

It seems perfectly safe and conservative to say that Searles Lake in the brine alone contains 30,000,000 tons of potassium chloride, calculated as 100 per cent. pure.

The first company to produce potash from Searles Lake brine was the American Trona Corporation. Their operations have proven to be profitable and they will undoubtedly be able to compete with Germany after the war.

Great Salt Lake.

This is still a body of water or brine and has not approached nearly so far in the process of desiccation as Searles Lake. It has, however, for some time been looked upon as a possible source of potash. In fact, the Diamond Match Company has had a plant in operation there for the past two or three years, and has recently doubled their output. The Virginia Carolina Chemical Company in co-operation with the Inland Crystal Salt Company of Salt Lake City have also built a plant. However, the composition of the waters of the lake is such that a very large amount of evaporation is necessary before the bitter liquors are sufficiently saturated with potash to make them workable. The primary evaporation is effected in open-air, clay-lined ponds, during which considerable quantities of sodium chloride are thrown out. The bitter liquor remaining is then worked up for the separation of potash which is effected by evaporation, heating and cooling; and depends upon the varying relative solubilities of the different salts. The principle difficulty encountered is to bring about a satisfactory separation of magnesium chloride. The total output from Great Salt Lake is so small that it is unlikely to become an important factor in the market.

Other American Lakes.

There are a number of lakes in the Western deserts which are possible sources of potash, among them Owens, Albert and Summer Lakes. But these all require so large an amount of evaporation and contain contaminating salts of such a character that up to date nothing has been done commercially for the production of potash from these lakes.

Pintados Deposit in Chili.

About sixty miles from the coast and directly on the railroad in Northern Chili, is a deposit which while it cannot be correctly called a lake, the result is essentially the same, and contains several hundred thousands of tons of workable potash in the form of a crystal body directly on the surface, averaging about 18 inches deep and covering many thousands of acres. The average analysis will show about 5 per cent. of K_2O. This potash upon leaching and crystallization can be recovered as the muriate, or, if mixed with the raw material from which sodium nitrate is made and which immediately adjoins this deposit, can be recovered as a nitrate.

While this deposit is not in the United States, it is 1,000 miles nearer to New York by water than California, and is located where labor and other conditions are so favorable as to offset the high price of fuel. The climate is better than at some points in our Western deserts, and the country has a stable government. Revolutions are unknown and there has been less change in their constitution and general governmental methods during the past century than in the United States, England, France, or any other large country.

Alunite.

Many centuries ago alunite was mined in Smyrna, and for about 400 years in Italy, and was used for the production of potash alum. When the search for potash began in this country, it was felt that a deposit of alunite might be found and that it might be used as a source of potash rather than potash alum. About this time such a deposit was discovered in Southern Utah, a few miles from Marysvale. Later it seemed that it would be necessary to discover some means of refining the alumina before potash could be produced in competition with Germany. However, early in 1915, when the price of potash had risen to what seemed impossible figures, Mr. Howard F. Chappell and his associates of the Mineral Products Corporation, decided to build a plant, and this has been in continuous and successful operation for three years, except for two shut-downs of one or two months each, caused by fires. They are now producing and shipping about 600 tons of sulphate per month, and the product is considerably better than 90 per cent. pure.

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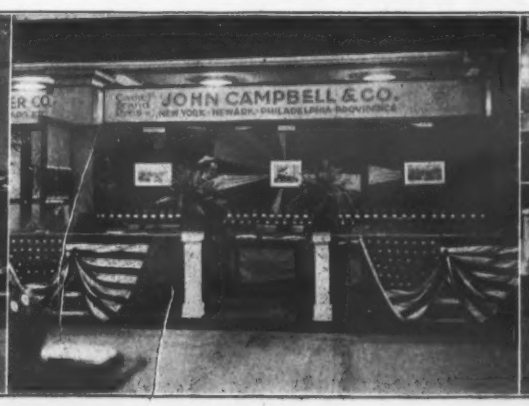

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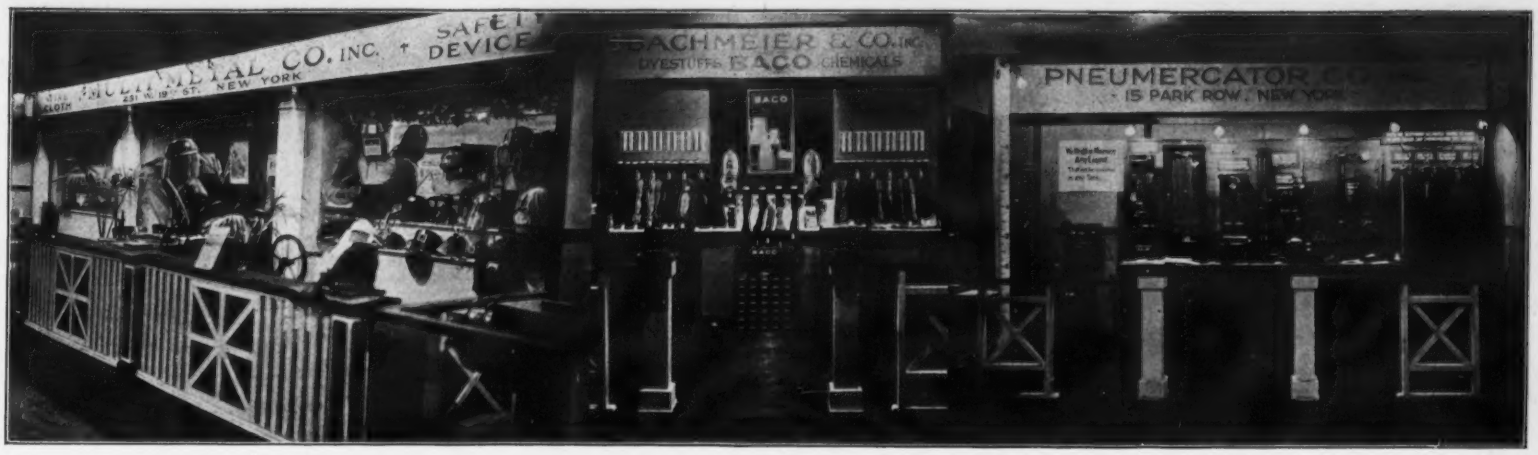

Multi-Metals Co., Inc. *Bachmeier & Co.* *Pneumercator Co., Inc.*

Several formulae are given by various authorities to indicate the chemical composition of alunite a double sulphate of potassium and aluminum, of which the following are representative:—

K_2SO_4, $3(Al_2O_3SO_3)$, $6\ H_2O$
(K,Na), $(Al,\ 2\ OH)_3$, $(SO_3)_2$
K, $(Al\ OH)_3$, $(SO_4)_2$, $3\ H_2O$

The first of the above formulæ appears to be more nearly correct, i. e., for the alunite now being worked at the town of Alunite, near Marysvale. Several methods have been proposed for the treatment of an ore of this character for the production of potash, but probably the simplest one is that employed in this plant where the ore is calcined at approximately 1000° C. This drives off water of crystallization and sulphuric acid, leavving water soluble potassium sulphate and alumina. Upon leaching and evaporation of the resulting solution, potash is recovered as sulphate, with a very small percentage of soda and some infinitely fine almuina which has passed through the filter cloths.

96 Per Cent. Alunite.

The alunite from the Mineral Products Corporation's mine is of a distinctly crystalline nature, and from 96 to 97 per cent. pure alunite. There are other large deposits nearby, but they are more nearly amorphous in appearance and carry more silica, which seems to interfere with the calcination and also with the subsequent refining of the alumina.

The alumina residue, containing any silica present in the ore, is now discarded; but it is planned later to refine and use it. It has been discovered that the silica content may be reduced to less than one-half of one per cent. by calcination with producer gas instead of pulverized coal and separation of the alumina from the silica by flotation. The average silica content of the ore used by Mr. Chappell's company is 3½ per cent. The loss on ignition is approximately 40 per cent., and the raw ore contains an average of approximately 10 per cent. of K_2O, or 18½ per cent. of K_2SO_4. The plant is operated profitably, and by reason of improvements and refinements, which have gradually been developed, will, it is believed, be able to compete with Germany after the war.

While highly technical in many ways, the paper of Alfred de Ropp, jr., of the American Trona Corporation on "Potash from Searles Lake," was an exceptionally interesting one. Mr. de Ropp illustrated his remarks with numerous lantern slides showing views of the lake, the plants and their operations in the recovering of potash crystals from the brine and various diagrams and chemical formulae. He led off in his talk by a thorough description of the Searles Lake Valley and surrounding country, going into the geological formations and calculations of geologists as to the prehistoric origin of the lake. He declared that the main body of the ground surrounding the lake and in many of its shallower parts was composed of an extremely solid mass of alkali crystals sufficiently strong to allow of the building of numerous roads to and from the plants as well as a huge clubhouse and other buildings. The potash contents of the lake brine average from 13 to 40 per cent. potassium chloride and it has been estimated that the lake holds 110,000,000,000 gallons of brine containing some 23,760,000 tons of potassium chloride. The company operating the plants at the lake expects to be producing by November next at the rate 4,500 tons of potassium chloride averaging 75 to 80 per cent. monthly, and by January 1, 1919, it also expects to be producing forty to fifty tons of pure borax daily.

Potash from Searles Lake.*

By ALFRED DE ROPP, JR.
Research Engineer, American Trona Corporation.

For the following topographical description of the Searles Lake Basin and its porous salt bed, I am indebted to Bulletin 580-L, written by Hoyt S. Gale, of the United States Geological Survey.

His description of Searles Lake and the surrounding country is the clearest and most comprehensive of any that have come to our notice. Figure 1 shows the location of California saline lakes, and Fig. 2 their respective elevations.

Searles Lake Basin is a broad, roughly circular valley or depression eight to ten miles from east to west and 20 to 25 miles from north to south, bordered by the abruptly rising slope of the surrounding ranges. This basin lies between the Argus Range on the west and northwest, and the Slate Range on the east; the latter a narrow, rocky wall, which divides it from the larger and deeper depression of the Panamint Valley.

The Searles Lake Basin was, during a part of the glacial epoch, occupied by at least one deep lake, whose traces are still so distinct as to be indisputable.

While the waters stood at their highest position the Searles Basin was flooded to a depth of 635 to 640 feet above the level of the present valley bottom, and the lake extended back through the Salt Wells Valley to join with a broad, shallow lake that flooded the greater part or the Indian Wells Valley.

With the lowering of the water-level less than seventy-five feet, the divide in the volcanic peaks between Indian Wells Valley and Salt Wells Valley became an actual division between two distinct water bodies, and for a time here also there was a period of overflow from Indian Wells Valley to the lower waters in the Searles Basin, in the same way that Owens Valley overflowed and spilled its waters into Indian Wells Lake. These are facts attested to by the records of the ancient shore lines and water channels.

The determined elevation of the lowest part of the present salt flat in the main Searles Basin is 1,617.6 feet above sea level.

The Owens Lake, during a period of former greater water supply, overflowed the divide at the south end of its basin and its surplus waters flooded in turn a succession of lower basins, of which the Searles Basin was one of the largest.

The Owens waters, after passing the Haiwee Divide, dropped some fifteen hundred feet in about thirty miles to Indian Wells Valley, and then spread out in a broad and relatively shallow sheet of water. This, in turn, also overflowed, its waters passing by way of Salt Wells Valley and a rock cut gorge at the lower end of that valley into the Searles Basin.

Eventually, the waters rose in the Searles Basin to such a height that all three of these valleys were submerged in one continuous body of water. The maximum water level in this basin was clearly determined by the elevation of an outlet pass on the south side of the basin, whence its surplus waters flowed into the extreme south end of Panamint Valley.

In the Panamint Basin a history similar in some respects to that of the Searles Basin was repeated. The waters rose until the height of the lowest outlet was reached, and as they evidently remained stationary at about that level for a relatively long period, it is presumed that this level was determined by the overflow of its surplus waters.

Salt Deposit Prospected by Drilling.

The most distinctive feature of this desert basin is the immense sheet of solid white salts that lie exposed on its bottom. It is to this salt deposit that the name Searles Lake has been generally applied. So far as known, at present the deposit is unique in this country in the variety of its saline minerals.

The crystal body underlies the surrounding mud flats found along the shores of Searles Lake.

The area of salt crust in the Searles Basin is some twelve square miles in extent, and averages from 65 to 75 feet in depth. The formation of the crystal body is such that the brine with which it is associated is absolutely free-flowing, and nowhere, even by extended pumping operations, have we been able to lower the level of the brine in the lake at any one spot to a noticeable extent.

The main or central salt deposit is a firm but extremely porous bed of salt crystals, so hard and compact that roads are built on it, teams and motor trucks have no dimculty in driving over its surface, and even the concrete foundations of the American Trona Corporation's pump house were laid on the surface of the crystal body.

The first fifteen to twenty feet of the crystal body is composed of cubical halite and will analyze 90 per cent. (or better) NaCl on a dry basis. Below this are alternating and irregular layers of salts, respectively nigh in trona, a sesquicarbonate of soda, sodium chloride and sodium sulphate. The potash content of these layers is very irregular, layers of potash-bearing crystals having been discovered by various drilling operations, which ran from 14 to 30 odd per cent. potassium chloride. (The average potash content of the crystal body is roughly 4 per cent. potassium chloride.)

In a report made to the American Trona Corporation by Charles S. Lee it is estimated that the crystal body contains 110,000 million gallons, or 594,000,000 tons of brine. This does not include any incoming waters from either underground or surface sources. This brine will average 4 per cent. potassium chloride. The potash contained in this brine amounts to 23,760,000 tons of potassium chloride.

The average brine pumped by the American Trona Corporation has the composition given in Table I.

TABLE I. AVERAGE COMPOSITION OF BRINE.

	Per cent.
Na	11.00
K	2.50
Cl	12.50
CO_3	2.65
SO_4	4.65
B	.35

In view of the process in use, the brine is given the arbitrary composition shown in Table II, based on the values in Table I.

TABLE II. COMPOSITION OF BRINE BASED ON VALUES IN TABLE I.

	Per cent.
NaCl	16.50
Na_2SO_4	6.90
Na_2CO_3	4.70
$Na_2B_4O_7$	1.50
KCl	4.75
Specific gravity	1.290 at 30 deg. C.

All the CO_2 is figured as normal carbonate, although the brine contains some bicarbonate. This brine is pumped to the plant from wells drilled in the crystal body of Searles Lake. The brine is pumped to storage tanks and from them directly to the evaporators. It passes first through a 16-foot Manistee vacuum pan, which is used merely as a pre-heater. From this it is pumped to three 22-foot pans of the same type, which are operated in triple effect.

The pans handle from 200,000 to 250,000 gallons of raw brine and about 100,000 gallons of mother liquor per 24 hours. This total of 300,000 to 350,000 gallons of liquor is concentrated to about 100,000 gallons of "concentrated liquor" before being sent to the crystallizing house to cool.

During the boiling, sodium chloride, sodium sulphate and sodium carbonate are salted out These tailing salts drop to the bottom of the vacuum pans and are removed by salt elevators of the regular Manistee type. The elevators discharge their salts into waste salt cones from which they are washed away by water.

Machinery is being installed by Dr. H. W. Morse, technical manager for the corporation, by which we will recover 95 per cent. of the potash formerly carried away by these waste salts. This will increase our output by some 10 tons (or better) of potassium chloride per unit per 24 hours. Operating under the old system this was previously lost to us.

Evaporation and Crystallization.

The liquor in the pans is boiled down to the point where potassium chloride begins to salt out, and is then sent to crystallizing vats in this condition at a temperature of 90 to 95 degrees C.

The temperatures and vacua are about as follows:—

Pan. No.	Vacuum, in.	Temp., deg. C.
4	24.5	50@55
3	24.5	50@55
2	21.0	70@75
1	12.5	90@95

The triple-effect pans are operated with constant flow, liquor entering the pan next the vacuum pump (where the vacuum is highest and the boiling point lowest), and passing in a constant flow from this pan through the intermediate pan to the final high-temperature, low-vacuum pan, and from this pan to the crystallizing vats.

Cooling and crystallization take place in crystallizing vats 54 by 15 by 6 feet. There are 36 such vats in the unit now operating, and the day's run of hot concentrated liquor fills from three to four of these. The vats cool for about eight days, and the liquor, now nearly at atmospheric temperature, is then drained off.

The crystal crop is shoveled into a traveling box and is carried to a drain floor, where it is allowed to lie for about a week or so before shipment.

Composition of Raw Material and Products.

Table III gives the average composition of raw brine, concentrated liquor, mother liquor returned to the system, and crude potash salts ready for shipment:—

TABLE III—PERCENTAGE COMPOSITION OF RAW MATERIAL AND PRODUCTS.

	Raw brine.	Concentrated liquor.	Mother liquor.	Crude potash salts.
$Na_2B_4O_7$	1.50	8.81	7.82	10.91
Na_2CO_3	4.70	10.82	10.53	1.70
NaCl	16.50	9.67	9.43	10.93
Na_2SO_4	6.90	2.58	2.08	0.44
KCl	4.75	14.87	10.82	66.34
H_2O	...	...	...	9.66
Totals	34.35	46.75	40.68	99.98
Sp. Gr. at	1.290	1.384	1.362	...
Temp., deg. C.	30	38	34	...

The American Trona Corporation is producing to date some 1,800 tons of crude potash salts a month. Additional equipment, such as a nearly completed

The Koppers Company *Anti-Hydro Waterproofing Co.* *Anaconda Copper Mining Co.*

INDEPENDENT CHEMICAL CO.

72 FRONT STREET - - NEW YORK

PRODUCTS:

CARBON BISULPHIDE

Manufactured by Stauffer Chemical Co., with factories at Monongahela City, Pa., and Chauncey, Westchester County, New York, for whom we are Exclusive Sales Agents.

TIN TETRACHLORIDE, ANHYDROUS

TIN BICHLORIDE

CAUSTIC SODA

Manufactured by Republic Chemical Co , of Pittsburgh, Pa., with factory on Neville Island, for whom we are exclusive Sales Agents.

SULPHURIC ACID

NITRIC ACID

SULPHUROUS ACID

SULPHUR DIOXIDE, ANHYDROUS

Manufactured by King Chemical Company, of Bound Brook, N. J., and sold exclusively by us.

AMMONIA, ANHYDROUS

ANILINE OIL

ANILINE SALT

BETANAPHTHOL

ORTHO-TOLUIDINE

We hold special sales agencies for these lines.
We are associated with

The Sterling Color Co., Inc., New York, who are sole agents for the Peerless Color Co., of Bound Brook, N.J., manufacturing Direct Fast Cotton Colors and Primuline S F.
We shall be pleased to furnish detailed information on request.

In addition to the above specialties we do a limited jobbing business in heavy chemicals generally

National Aniline & Chemical Co., Inc.

The Corner Booth of the Dow Chemical Company.

second unit, together with a 300-ton ice plant for refrigerating purposes and new methods for treating the concentrated liquor (devised under the direction of Dr. H. W. Morse) will enable the American Trona Corporation to produce by the end of October some 4,500 tons of potash salts a month, analyzing from 75 to 80 per cent. potassium chloride and containing less than 3.5 per cent. borax, figured as anhydrous sodium tetraborate.

By the first of 1919 the American Trona Corporation will be producing some 40 to 50 tons of refined borax daily analyzing 99.50 per cent. $Na_2B_4O_7 10H_2O$.

Potash in the Crystallizing Vats.

It takes from seven to eleven days for a vat to cool to near atmospheric temperature, depending on the time of the year. At present, during summer weather at Searles Lake, the vats are dropped at from 40 to 45 deg. C. In the winter when the nights are very cold, the temperature of the vats drops more quickly, and the mother liquor is returned to the system at from 25 to 30 deg. C.

All of this has a big effect, not only upon the quantity and nature of the salts produced, but it also has a big effect upon the actual operation of the vacuum pans themselves.

The crude potash salts are carried from the vats to the drain floor in boxes of 2,000 pounds capacity, which are operated by self-propelled electric hoists. The potash stays on this drain floor for about seven days before it is passed through a Stedman mill prior to being loaded for shipment.

Trona Reef, Northeast End of Searles Lake.

The company owns some 700 acres of claims here. The high grade trona in these claims amounts roughly to 40,000 tons. Besides this there are some 20,000 tons of a lower grade trona comprised in these claims.

The American Trona Corporation has built a raised road completely across the lake, connecting the Trona Railroad with its Trona claims by a narrow gauge, gasoline-operated railroad.

THURSDAY.

America's Development of Ceramic Industries.

America's development of its ceramic industries during the past few years to the position where the United States is now absolutely independent of Germany and Austria for supplies of its fire brick, pottery, glass, etc., was the keynote struck at the Chemical Exposition at Grand Central Palace Thursday. The ceramic branch of the chemical industry is daily gaining in importance and the program at the Palace was devoted exclusively to subjects bearing on activities in the ceramic industry.

Optical Glass.

At the beginning of the war but little optical glass was being manufactured in this country. The necessity of the war brought together the manufacturers and the scientific and technical organizations with the result that the developments in this field have been truly remarkable. The most interesting advancements in the glass industry have been those relating to the optical, colored (signal) and the resistant or chemical glasses, which heretofore were produced chiefly by Germany.

In speaking of the recent developments in ceramics in this country, V. V. Bleininger, of the Bureau of Standards, Pittsburg Laboratory, told a gathering of chemists yesterday that one of the most important functions of the ceramic industries is the supply of refractories for the metallurgical operations of the country, steam power plants, by-product coke oven, gas plants, glass works, etc. The demand for these products has been enormous and has been met by the refractories industries in a very satisfactory manner.

"The lack of the German Klingenberg clay for crucible making is not as serious a matter as has been thought," said Mr. Bleininger. "It has been shown conclusively that it can be replaced both by English and American ball clays. Similarly, the German Gross Almerode clay used in the making of glass pots has been replaced by American clays and synthetic mixtures in a very satisfactory manner. In fact, it is quite probable that the new techniques now being developed will yield results superior to those formerly obtained with the use of imported clay. The shaking up caused by the war will, in the end, be of distinct service to the glass refractories industry.

"The manufacture of hard-fire, true porcelain has received a powerful impetus through the war. Three plants are already operating successfully on the production of chemical porcelain, and are making rapid strides with respect to quality. The manufacture on a large scale of hard porcelain tableware is to be begun in the very near future. By the use of automatic machinery, mechanical dryers and tunnel kilns they will be enabled to meet foreign competitors on equal terms. The plants now in course of construction excel all European potteries in the elimination of unnecessary labor cost and expenditure of fuel. The development of a hard-fire porcelain industry is, indeed, a national duty. It would be preposterous and humiliating to contemplate any further dependence on Germany and Austria for these products. By establishing this industry we shall be in position to seek the South American markets to which we have a fair right."

At the meeting of the American Ceramic Society Thursday afternoon a number of interesting papers were read on ceramic subjects. L. E. Barringer, chairman of the meeting, read a paper entitled "Manufacture of Electrical Porcelain"; H. Ries, "American Clays"; F. A. Whitaker, "Manufacture of Stoneware"; J. B. Shaw, "Fuel Conservation," and S. C. Lindberger, "Carborundum Refractories."

Recent Developments in Ceramic Industries.

A. V. BLEININGER.

One of the most important functions of the ceramic industries is the supply of refractories for the metallurgical operations of the country, steam power plants, by-product coke ovens, gas plants, glass works, and many other purposes too numerous to enumerate here. The demand for these products has been enormous, and has been met by the refractories industries in a very satisfactory manner. Although at times the need of No. 1 fire bricks has been greater than the production, such a condition does not exist at the present time, owing to the expansion of this branch of the industry. One of the urgent needs in this connection is the establishment of a classification and specification of the several grades of clay refractories. This task is being undertaken at the present time by the War Industries Board. The work of standardizing the shapes of fire brick has already been accomplished.

Graphite Crucibles.

Much has been said on the question of graphite crucibles. The graphite problem is undoubtedly the more important one in this connection. It is a difficult matter to replace Ceylon graphite altogether with the domestic mineral. It would be impossible to make graphite mixtures of maximum carbon content from the two American materials. To what extent American flake graphite can be admixed with the Ceylon graphite remains to be seen. The writer has seen mixtures in which the flake added amounted to 20 per cent. of the total graphite content and gave fair foundry results. It might be possible, however, to perfect processes which will enable the crucible maker to employ larger percentages of domestic graphite, and at the same time secure practically the same results as with Ceylon graphite. On the other hand, there is no reason why a large quantity of domestic graphite should not be used in the making of stoppers and similar articles.

The lack of the German Klingenberb clay for crucible making is not as serious a matter as has been thought. It has been shown conclusively that it can be replaced both by English and American ball clays. Similarly, the German Gross Almerode clay used in the making of glass pots has been replaced by American clays and synthetic mixtures in a very satisfactory manner. In fact, it is quite probable that the new techniques now being developed will yield results superior to those formerly obtained with the use of imported clay. The shaking up caused by the war will, in the end, be of distinct service to the glass refractories industry.

Special clay refractories have been developed also with reference to improved thermal insulation, including materials highly refractory, light in weight, and possessed of good insulating qualities. The saving in fuel consumption and weight through the use of such products is bound to be considerable.

The manufacture of hard-fire, true porcelain has received a powerful impetus through the war. Three plants are already operating successfully on the production of chemical porcelain, and are making rapid strides with respect to quality.

Porcelains for special purposes have been developed successfully. Thus, the National Bureau of Standards has introduced the manufacture of the refractory Marquardt porcelain, essentially sillimanite, formerly produced by the Royal Porcelain Manufactory at Berlin and used so largely for pyrometer tubes and similar articles. Likewise, we have succeeded in making porcelains possessing remarkably high electrical resistance at elevated temperatures. It is evident that such properties, coupled with good mechanical strength, are essential for such uses as aeroplane spark plugs. There is every reason to believe that the principles thus worked out will greatly assist in producing special grades of electrical porcelain for use under severe conditions.

Chemical Stoneware.

One of the clay industries vital in the prosecution of the war is the manufacture of chemical stoneware. But few realize the magnitude of the task which confronted this industry, especially when handicapped by shortage in labor, fuel and other necessities. It is very gratifying, indeed, to be able to say that the stoneware manufacturers have met the situation so well and have been able to supply the needs of the chemical industries. This statement applies equally to the manufacturers of acidproof, enameled cast iron, and sheet steel, products which have played an important role in recent chemical developments.

Another industry having a direct bearing upon war work is that engaged in the manufacture of abrasives and grinding wheels. The rapid growth of this branch of manufacture and its technical development are characteristic of America.

With reference to the glass industry the three most interesting developments are those relating to the optical, colored (signal), and the resistant or chemical glasses. When it is realized that at the beginning of the war but little optical glass was being produced in the United States, the rapid development of the art presents an inspiring example. The necessity of war brought together the manufacturers on the one hand and scientific and technical organizations like the Geophysical Laboratory of the Carnegie Institute and the Bureau of Standards on the other.

Silicates.

It is a source of pleasure to note also the fact that scientific and technical researches dealing with the technology of silicates are being continued at the present time, even though they have more or less bearing upon conditions brought about by the war. We are mastering more and more the control of the class of dispersed systems represented by clays floated in water, their drying behavior, and the changes which they undergo upon vitrification and fusion by resorting to the methods of the scientific investigator.

It is hoped that this hasty contribution may afford some conception as to the activities in the ceramic industries.

Carborundum Refractories.

S. C. LINBARGER.

Ceramic Engineer, Carborundum Co.

Ever since its inception one of the vital problems of the ceramic industry has been the question of suitable refractory materials, both for use in its own factories and as a product which will meet the demands of other industries requiring the highest grade of refractories. These materials must have sufficient strength under normal conditions to carry the weight of the structure of which they are an integral part and must, furthermore, have sufficient refractoriness to carry this same load under the extreme heat conditions to which they are subjected.

Crystallized silicon carbide, or carborundum as it is most commonly called, has long been recognized as having unique physical properties, which make it peculiarly adaptable in the construction of highly refractory materials. However, up to the present time it has not had a very wide application in this field, owing to its high price and also to the lack of sufficient quantities to supply other than the abrasive industry, which, of course, is its field of primary importance.

Two Types.

At the present time there are two types of crystallized carborundum refractories which have been highly developed. The first type goes under the trade names of "refrax" and "silfrax," depending upon whether the crystallization of the aggregate is large or small. The essential characteristic of this type of refractory is that the final products obtained are pure silicon carbide. The other type, which is known as "carbofrax," is the type most generally applicable for use in the ceramic industries. It is made by bonding graded crystallized carbide of silicon grains with various percentages of a mixture of special refractory clays or other bonded substances.

When bonded with even a high percentage of clay binder, brick, which contain carborundum, give very great refractory values. However, since the refractoriness of a conglomerate refractory mass is a direct function of the amount and character of the least refractory constituent, it is recognized that the ideal condition to be obtained is that the amount of binding material used be the least consistent with the requisite strength, and that the vitrification temperature of the binder be as high as is commercially practical. Mixtures of grits and methods of bonding are employed which insure a very dense body of low porosity, with but a minute percentage of refractory clay binder, and at the same time, allow the manufacture of large and intricate shapes.

How It Forms.

Experimentation has shown that crystalline silicon carbide forms at 1,840 deg. C., and dissociates at 2,240 deg. C. into its elements, the silicon being volatilized and the carbon remaining as graphite. No softening or fusing occurs below the dissociation temperature which is shown by the sharp and perfect forms of graphite pseudomorphs or skeletons which are left when silicon carbide dissociates. This is in direct contrast to most other refractories, such as silica, chrome, and fireclay brick, which soften at a temperature several hundred degrees lower than their fusion point.

Aside from the importance of fuel economy, high thermal conductivity and heat capacity of crystallized carborundum impart to refractories made from it the property of withstanding the most sudden temperature changes because any variance in the temperature of the surface is quickly communicated to the whole mass and the heat is rapidly dissipated.

As silicon carbide is not subject to any molecular changes being formed at 1,850 deg. C. in a crystallized state, and has an extremely low coefficient of expansion, no porous structure is necessary and a high density can therefore be obtained. This is not possible with most refractories since they contain ingredients which have one or more allotropic forms and must be made open and porous to successfully withstand the internal stresses. The low coefficient of expansion and high density of carborundum brick permit the construction of solid structures in places where the leakage of heat and gases through cracks in the walls

due to alternate contraction and expansion is a detriment to the successful operation of the process.

How Carborundum Is Made.

Carborundum is manufactured by passing an electric current through a mixture of sawdust, sand and coke in a long rectangular resistance furnace. By the utilization of an enormous amount of electric energy the central portion of the furnace is brought up to about 2,200 deg. C., at which temperature the silica is volatilized. One molecule of silicon combines with one of carbon, forming a core of pure crystallized SiC or silicon carbide between the electrodes in opposite ends of the furnace. Immediately surrounding this is a zone of the amorphous variety of carbarundum, which is commercially known as firesand. Chemically it is a mixture of several silico-carbides which vary in composition from Si_2C_2O to Si_6C_6O. This represents a partial reduction of silica by carbon or a solid solution of silicon carbide in silica.

This material is also highly refractory, but owing to its lower heat of formation and lack of definite crystalline structure it is not as stable under extremely high temperature as the crystalline variety. However, it has a wide application in places where a higher degree of refractoriness is required than can be obtained in the best grade of fireclay brick.

How Used.

Finely ground firesand when mixed with a bonding material such as kaolin or high grade plastic fireclay, makes a refractory which can be moulded in place or plastered over the surface of a loweer grade refractory to protect it from the cutting action of impinging flames. Owing to the fact that even the intense reducing heat of an oil flame does not cause any modification of the firesand, it has come to be a recognized material for the linings of brass furnaces of all types. It is also used as a protective coating for the brick work of furnaces, bag and baffle walls and the walls of potters' kilns. For this work it is mixed with water and sodium silicate, and oftentimes a small amount of clay to increase the adhesion and applied to the walls in a slip condition.

Refractory materials made of mixture containing silicon carbide are now being used in various capacities in the ceramic as well as the metallurgical industries. When the thermal efficiency and the increased permanence of structures made from it are recognized it promises to have a much wider application in the burning of ceramic wares.

FRIDAY.

Symposium on the Metal Industries.

To the chemist interested in the development of the rare metals industries, there was a wealth of material vouchsafed him at the symposium in the auditorium, which was the feature of the Friday session. H. C. Parmalee was the chairman, and the program was made up of the following papers:—

Leonard Waldo (Rumford Metal Company), "Development of the Magnesium Industry."

Alcan Hirsch (Hirsch Laboratories), "Ferro-Cerium Pyrophoric Alloys."

Theodore Swann (Southern Manganese Corp.), "Ferro-Manganese."

Jos. W. Richards (Lehigh University), "Ferro-Alloys of Silicon, Tungsten, Uranium, Vanadium, Molybdenum and Titanium."

SATURDAY.

Symposium on Industrial Organic Chemistry.

One of the most important sessions of the entire week of the Exposition, and one which could not be reported entire because of the early hour at which the Reporter went to press, was that of Saturday afternoon, the closing day of the convention. C. A. Higgins, whose address on the "Recovery of Potash from Kelp," was a feature of the Wednesday afternoon session, spoke again on Saturday on the related topic, "Kelp as the Source of Organic Solvents." George H. Tomlinson, of Kinzinger, Bruce & Co., Inc., took for the subject of his paper, "Wood as a Source of Ethyl Alcohol," while Samuel P. Sadtler, Ph. D., of S. P. Sadtler & Son, Philadelphia, gave one of the most interesting resumes of the entire Exposition in his "Industrial Organic Chemistry and Its Progress," which, in full, was as follows:—

Advance in Industrial Organic Chemistry Since the Beginning of the War.

By SAMUEL P. SADTLER, Ph. D.

S. P. Sadtler & Sons, Philadelphia.

Many ordinarily intelligent people with no special acquaintance with scientific matters will confess to having had the belief that the United States had no established chemical industries at the outbreak of the present great world war, or if we had any, they did not cover the field of what is known as organic chemistry. Organic chemistry was to them the field of coal-tar dyes and synthetic medicines. And was not this the peculiar and exclusive domain of the German chemical manufacturer? We rather think that this expresses the actual knowledge on the subject on the part of our non-scientific newspaper and magazine writers at the outbreak of the war.

However, the elements which go to favor the establishing of a chemical industry are a wealth of raw materials and a market for the manufactured product, and with these the co-operation of intelligent chemical effort and capital. All four of these elements existed in the United States, and the result of their co-operation had already been quite effective long before the beginning of the war in giving us flourishing chemical industries based upon organic raw materials and involving applications of organic chemistry. When we recall the great wealth of this country in petroleum and asphalt, in all varieties of coal, in vegetable and animal oils and fats, in cereals of all kinds and in fibers of indispensable character, we would be surprised if flourishing chemical industries had not been established.

Magnitude of the Petroleum and Oil Industries.

Let us briefly view some of these industrial organic developments as they existed prior to 1914. The American petroleum industry easily ranked as the first in importance in supplying the world with the various products of mineral oil. Of a total annual world's production in 1914 of over 460,000,000 barrels, the United States produced 265,762,000 barrels, or just about two-thirds, while Russia, the next in rank, produced 67,000,000 barrels, or 16.7 per cent. of the total amount.

But it is not only the raw material production that is to be considered. By far the larger proportion of this crude oil was refined in the United States, and from it were made gasoline, kerosene, lubricating oils in great variety, paraffin and paraffin candles, vaseline and similar products. These products were not alone for the American market but went all over the world.

We also had a great and well developed industry in the extraction, refining and working up of vegetable and animal fats and oils. A peculiarly American industry was the cottonseed oil and cake industry. Hundreds of mills throughout our Southern States were devoted to the crushing of the seed and the preparation of the cake, while the refining of the oil and the making of the finest edible products was carried out in large plants. The enormous production of lard and lard oil by our great packing companies and the preparation of oleo oil for foreign shipment was also an important and well established American industry. As a side product, the extraction and refining of glycerin had also become well established and the American soap industry was also well developed and a large export business already inaugurated.

The utilization of linseed oil for paint oils and in the manufacture of linoleum and oil cloth had also reached a high development at the hands of American technologists.

Corn Products Distinctively American.

The great naval stores industries involving the production and utilization of American turpentine and resin had also been well developed and many minor chemical industries based upon them. America was also one of the largest consumers in the world of rubber; thanks to the manufacture of all classes of rubber and water-proofed goods and to the utilization for automobile tires, the working of rubber had been extensively developed.

The refining of sugar, in part produced in the United States and the neighboring West Indies and in part from imported European raw beet sugar, had become an extensive industry with the most modern of plant equipment and under scientific chemical control.

As America is in a large degree the granary of the world in its production of cereal foods, we had large chemical industries already occupied with the preparation of the special classes of food products of cereal origin. One of the best instances of a distinctively American industry developed from American material is the corn products industry. From the maize or Indian corn is produced corn starch for food purposes and for technical purposes, glucose or commercial dextrose, corn or maize oil and commercial dextrines. This industry has been developed from a distinctively American cereal and on lines quite peculiar to it as an industry of American growth.

Importance of the Cotton Fiber.

Turning to the textile industries we have, as an American production, one of the world's most useful fibers, viz., the cotton fiber. I have already referred to its peculiar by-product, the cottonseed and its utilization. However, we have many important industries utilizing the cotton fiber in which its bleaching, dyeing and other treatment is controlled by accurate chemical knowledge and practice.

The textile industries using wool and silk as well as cotton have, however, attained a high development in the United States, and the chemical side involving the cleansing and after treatment of the fibers had been thoroughly worked out.

The products of destructive distillation remain to be spoken of. Our American wood-distillation industry will be especially presented by another speaker during this Exposition and so I will pass this by. Coal distillation for gas-making had been practiced by the most accurate scientific methods and great varieties of special gas-making processes had been developed. It will be remembered that the Lowe water-gas process was an American invention, which has been copied and adapted since in various other countries. However, we were slow to discard the old wasteful beehive oven for coking of coal for by-product ovens which collect the valuable residuals, including gas, tar and ammonia. The production of coal-tar crude ingredients was, therefore, only moderately developed, and of what we term the "intermediates" for the color industry, there was scarcely any production.

An American dye industry using imported intermediates therefore existed, but it existed under difficulty and played but a subordinate part in supplying the American market with the dyes required for our textile industries.

This brief survey shows that it is a great mistake to assume that there were no organic chemical industries existing in this country in 1914, at the outbreak of the war. Nevertheless, the general public knew little of the chemist and his

OXALIC ACID
TEXTILE SIZES
Gums Dextrines Sago Flour Tapioca Flour
CORN WHEAT STARCH POTATO RICE
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Chicago St. Louis Providence Philadelphia Troy Cleveland
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The Handsome Exhibit of Frank Hemingway, Inc.

Warner-Klipstein and the Warner Chemical Co.

actual or potential value to industry or commerce. Capital, which frequently made large investments in mining and similar enterprises, many of which were largely speculative, had not made the acquaintance of the chemist to any notable extent perhaps because the language of chemical reactions was something foreign to his experience or training and hence distrusted. The war came and we soon learned how great a disturbance such a great war could be to the world's commerce in which the United States played a vitally important part. We also learned promptly how chemical industries were the foundation stones for this great commerce. It soon developed that war, in its modern form, was based upon the chemical activity and scientific development of a country, and then the chemist began, as it has been repeatedly said, to come into his own.

Our special topic, therefore, is to briefly note how our American chemical industries, and in particular those involving organic chemistry, have responded to this war impulse and demand in the four years that have elapsed since the beginning of the war period in 1914.

Response to Demand for Gasoline.

Our petroleum industry, which we have shown was already in a highly developed state, had important problems at once presented to it. Great as was our refining capacity, it was utterly inadequate to produce in normal course the quantities of gasoline that were required. Besides the growing automobile consumption, the war demands for motor trucks and for aeroplane and tractor engines came as an added load on the industry. Beause of the demoralization of the Russian oil production and the German occupation of Roumania, the whole gasoline supply for the allied nations has to come from America. To meet this demand we have, in addition to what may be called "straight refinery" gasoline, blended "casinghead" gasoline and "cracked" gasoline. Under the pressure of the great demand, large quantities of volatile hydrocarbons are washed out by suitable solvents or condensed out of natural gas and then blended with heavy naphtha to bring down the gravity to a proper average. Such a gasoline will necessarily have a wide volatility range, but is available for most uses of the normal refinery gasoline. Most of the areas producing natural gas are available for this gasoline extraction, but it has developed particularly in West Virginia, in Oklahoma and in California. It is furnishing a rapidly increasing amount of gasoline yearly.

The third source of gasoline mentioned is from special cracking processes and it is this class of processes which has been attracting the most interest and giving the greatest promise of large results. The whole subject was discussed from a theoretical and historical point of view in Bulletin 114 of the Bureau of Mines, by Rittman, Dutton and Dean. Since the date of that publication in 1916, a great deal additional has been published in the journals and much has been done in a practical way. The Burton process, adopted by the Standard Oil Company, is now in operation on a large scale in several of the largest refineries of that company; the Rittman process has been tried on a working scale, although not yet developed to a final form for large-scale production; the McAfee process of decomposition in the presence of aluminium chloride as a catalyst has been developed by the Gulf Refining Company, and the Snelling process has also been brought forward.

Cracking Heavy Oils.

That heavy petroleum oils can be cracked so as to produce much light oil or gasoline is beyond question, but the problem is to avoid the production of large proportions of unsaturated hydrocarbons which require acid treatment in the product. McAfee claims to avoid this production of unsaturated compounds and that his gasoline requires no acid treatment, but the success of his process is conditioned on the economical recovery of the anhydrous aluminium chloride available for use. Enormous quantities of other special petroleum products have also been called for by reason of war demands, such as high-grade lubricating oils. I had brought to me for testing some time back a "recoil oil," required the government for use with heavy guns, that with a high viscosity had to stand a cold test of — 5 degrees F (— 20 degrees C.).

Then the demands of the English and the United States Navy for fuel oil have drawn upon the Mexican oil fields as well as those of Louisiana and Texas and have pushed production to the maximum.

Meanwhile a new raw material has been brought to notice that is capable of adding enormously to our available petroleum supplies in the oil shales of Western Colorado and Eastern Utah, the deposits also being found to some extent in Nevada, Wyoming and Montana. These shales readily yield by distillation a crude oil capable of furnishing gasoline, kerosene and paraffin, and in addition large amounts of ammonia, so that sulphate of ammonia may be obtained as a by-product. In Bulletin 691B of the United States Geological Survey, D. E. Winchester has described this occurrence and gives records of distillation. These shales are said to be like the Scotch shales, but richer in oil. With the gradual exhaustion of the oil fields they will prove a welcome addition.

The vegetable and animal oil markets have been greatly affected by the war and the industries based upon them have been changed in a revolutionary way in many cases. The first cause may be said to have been the export embargo established by Great Britain upon all glycerine-containing oils with the beginning of the war. Following this came a shortage in the cottonseed crop in 1915 and the introduction of soya bean culture in the South. As the refined cottonseed oil took more and more the position of an edible oil, commanding correspondingly higher prices, the soya bean oil took its place for industrial uses, for soap and paint manufacturers, and as a constituent of compound lard and oleomargarine. Soya bean cake has also been readily taken up for stock feed and for fertilizer. The soya bean contains more protein than either cottonseed or peanuts, as much fat as cottonseed, and only one-fourth as much fiber as cottonseed or peanut.

It has a lower iodine number than linseed oil and is slow in drying, so that it cannot completely replace linseed oil in the paint industry, but can be admixed with it. Besides the production in the South, which according to government reports in the year 1917 was from 531,000 acres, we have had an enormous development of the soya bean oil importations, as the following figures will show:—Importation for year 1914, 12,500,000 pounds: for 1917, 264,900,000 pounds, and for 1918, 336,824,646 pounds.

Most of this coming from Manchuria enters Seattle and other Pacific coast ports. All available storage facilities at Seattle and other coast points have been overtaxed in the handling of this supply.

Hydrogenation Gives Oils an Added Value.

Another great development in oil supplies has come from the greatly increased production of peanut oil. This has come to the fore as a salad oil and for soap making. The crop in the United States rose from 3,500,000 bushels before the war to 40,000,000 bushels in 1916. For 1917, the government reports show that 3,277,000 acres were devoted to its culture in the South, and for the year of 1918 it is estimated that in the State of Texas alone 3,000,000 acres will be devoted to it. The importations have also increased sixfold since 1914, now amounting to over 8,000,000 gallons.

A year ago we had no castor beans grown in this country to speak of. Today we have at government instigation hundreds of thousands of acres devoted to it in Florida and elsewhere, with the product contracted for by the government. As illustrating the greatly increased demand for oils capable of yielding food products we may also note the remarkable growth in the cocoanut oil and copra importations. In 1914 the importations of cocoanut oil amounted to 74,386,213 pounds, in 1918 it had grown to 289,194,853 pounds; of copra, for the expressing of cocoanut oil, we imported 45,437,155 pounds in 1914, and in 1918, 486,996,112 pounds. Similar changes have taken place in the fish-oil markets, with the decrease in the menhaden catch, due to the commandeering of fishing boats and scarcity of men to man them. Through our Pacific ports chiefly are imported quantities of dog-fish, halibut, salmon, sardine, shark, tuna-fish, candle-fish and walrus oils, largely new to the market, while whale oil, seal oil and porpoise oils are again appearing in large quantities. These fish oils have, moreover, an added value as sources of supply since the general application of the hydrogenation process, whereby they can be changed into hardened fats without offensive odor and of the greatest value as soap stock and for glycerine production.

Glycerine and Oils for Explosives.

With regard to the increased production of glycerine because of the war demand, I have no figures, but it has been very great, so that the use of glycerine in pharmaceutical preparations has been discouraged in order to conserve the glycerine for nitroglycerine production and for export to our allies. About 21,000,000 pounds have been exported in 1918.

In the field of essential oils there are a few items of interest to note. With the study of wood turpentines as distinguished from gum turpentine it has been recognized that spruce-wood turpentine, now a waste product of the sulphite process of making paper pulp, has a peculiar composition. It consists largely of one aromatic hydrocarbon, cymene (isopropyl-methyl-benzene). On subjecting this to the Friedel and Crafts reaction with aluminium chloride in the presence of an excess of benzine, toluene and cumene (propylbenzine) are formed. The toluene is readily converted into TNT (trinitrotoluene) and the cumene may be oxidized directly into benzoic acid. The work, as reported in the Journal of Industrial and Engineering Chemistry for May, 1916, is still in a purely experimental stage, but it has much promise.

One of the newer uses of essential oils which has particularly stimulated the production in the last few years of pine oil in the South is for the ore flotation process. The concentration of both copper and zinc ores in the United States, as in other parts of the world, is now effected by agitating the finely pulverized ore with water in the presence of a small quantity of oil. While fatty oils, mineral oils, coal-tar and wood-tar creosotes have been used, certain essential oils have been found to be specially adapted for this treatment. In this country pine oils, both steam-distilled and destructively-distilled have been especially used and quite an industry in these oils has developed. The magnitude of our copper and zinc production is such that, although the amount of oil used in this flotation process is relatively small (less than 1 per cent. on the ore), the aggregate consumption of oil is very large.

The war demand has greatly increased the call for rubber goods of all kinds, especially automobile tires, and, consequently, the consumption of crude rubber has grown rapidly. The importations of rubber in 1914 amounted to 132,000,000 pounds, but grew to 390,000,000 pounds in 1918. Exports of rubber boots and shoes were valued at $1,113,495 for 1914, and $5,774.341 in 1918; the automobile tire exports were valued at $4,068,639 in 1914, and $15,128,294 in 1918.

Varied Uses of Organic Solvents.

In this connection reference may be made to the greatly increased demand for organic solvents, and the work done to meet this demand. The most important work of this kind is, probably, the production of acetone and similar solvents from the Pacific coast kelp by the Hercules Powder Company, and this, fortunately, we will have specially presented at this time in a paper dealing fully with the subject.

Another promising line is the manufacture of amyl acetate from petroleum pentane. This work has been carried out at the Mellon Institute in Pittsburgh, Pa. The use of these organic solvents is manifold, but we may note the extensive use of pyroxyline solvents and the greatly increased use of lacquers of this description in the last four years. From aeroplane wing dope to artificial leather we have a variety of utilizations; some of these have grown to extensive industries within the past few years.

Closely allied with this industry is the artificial silk industry, one variety of which is made from a nitrated cotton or pyroxylin. Besides this variety we have the viscose variety, the cellulose acetate, and the cuprammonium artificial silk. The development of these products has been very great in this country in recent years, both for films and for artificial silk as a fiber, increasingly used in the textile trade.

Industrial alcohol production has developed greatly in the past few years, and numerous new plants have been established for its production from a variety of sources. Much attention has been given to a revival of the Classen process for hydrolyzing the cellulose of sawdust and fermenting the sugar produced therefrom. I have no reliable information, however, as to whether the difficulties which developed when it was first tried in this country some years ago have been sufficiently overcome to make it a dependable manufacturing process, although it has attracted much newspaper attention. More reliable are the processes based upon the use of low-grade molasses and cereals of various kinds and a large production, at present taken over by the munition manufacturers, has been the result.

In addition to this direct war use much alcohol is made for denaturing and use in the manufacture of pharmaceutical products. Some twenty-seven denaturing formulas have been allowed by the United States internal revenue office, and these adapt it for use in a wide variety of cases where tax-paid pure alcohol is inadmissible on account of its cost. This form of utilization is not of temporary character as is the use in munitions manufacture, but is destined to grow and require an increasing amount of alcohol properly denatured.

Great Development of the Dye Industry.

We come now to the industry which may be said to be the touchstone of our ability to achieve results under difficult conditions when confronted with an imperative necessity, viz., the building up on American soil from American raw materials with American capital and American chemical effort an independent dyestuff industry. In speaking of the conditions in the United States in 1914, I said that we had a small dyestuff industry, working under trade difficulties, for the most part with imported intermediates. There were, to be exact, five manufacturers, large and small, of dyestuffs in 1914. The tariff census of coal-tar products, as reported for 1917, shows that there were at that time in the United States eighty-one establishments engaged in the manufacture of coal-tar dyes and 117 firms manufacturing intermediates. While these figures are striking and can not fail to arrest attention, it is only when we look more fully into the details that we get an adequate understanding of the great industrial achievement that has been wrought in the last four years.

Dependence on Foreign Sources.

First, as to our dependence upon foreign sources, chiefly German, for our dyestuffs at the beginning of the war in 1914. We were then making in this country a bare one-fifth of our needs out of foreign materials and had neither crudes nor intermediates to speak of. Dye imports from Germany in 1914 were valued at $5,965,537; in 1916 they were valued at $849, in 1917 $464,499, and in 1918 at $3,048. The relatively large amount for 1917 represents shipments held at first in Great Britain but released later on appeal. Do we still import any dyestuffs? Yes. There are two reasons for importing from Switzerland and Great Britain mainly certain dye colors.

The new American dye industry did not at once attempt to duplicate the 900 or more supposedly distinct synthetic dyes of the German dealers, but took up the most important classes and produced a moderate number of representative dyes, covering as far as possible the coloring or tinctorial needs of the textile trade. Some of the finer shades are still missing, hence the Swiss importations.

The other reason, and, perhaps, the more important one, was that Congress, in the enactment of our present tariff law, cut off the ad valorem duty on indigo and alizarine products, which caused manufacturers to leave the production of these very important products until they had covered the need in other groups more fully.

Synthetic Indigo.

However, synthetic indigo of American manufacture is already on the market, and there will be three sources of supply for it in 1918, one of which promises to supply at least one-half of what the American trade will need for the year. Similarly, artificial alizarine of American manufacture, made in Brooklyn, in fact, will be available in large quantities from this time on.

Meanwhile, approximately three-fourths of the dyestuffs needed are being produced, and some colors in such quantity that an export trade has been started. Let us note that for the year ending June, 1916, the exports of all varieties of dyestuffs—aniline dyes, logwood extract and all other—totaled $5,102,002 in value, but the bulk of these were vegetable colors, including logwood extract. In 1917, the valuation of the exports had leaped to $11,709,287, with an increasing amount of such colors as sulphur black and the simpler aniline colors. In 1918, and this shows the quality as well as quantity of development, the total exports of dyestuffs were valued at $16,921,888. Of this, total aniline colors make $7,298,298, logwood extract $2,339,480, and all other $7,-

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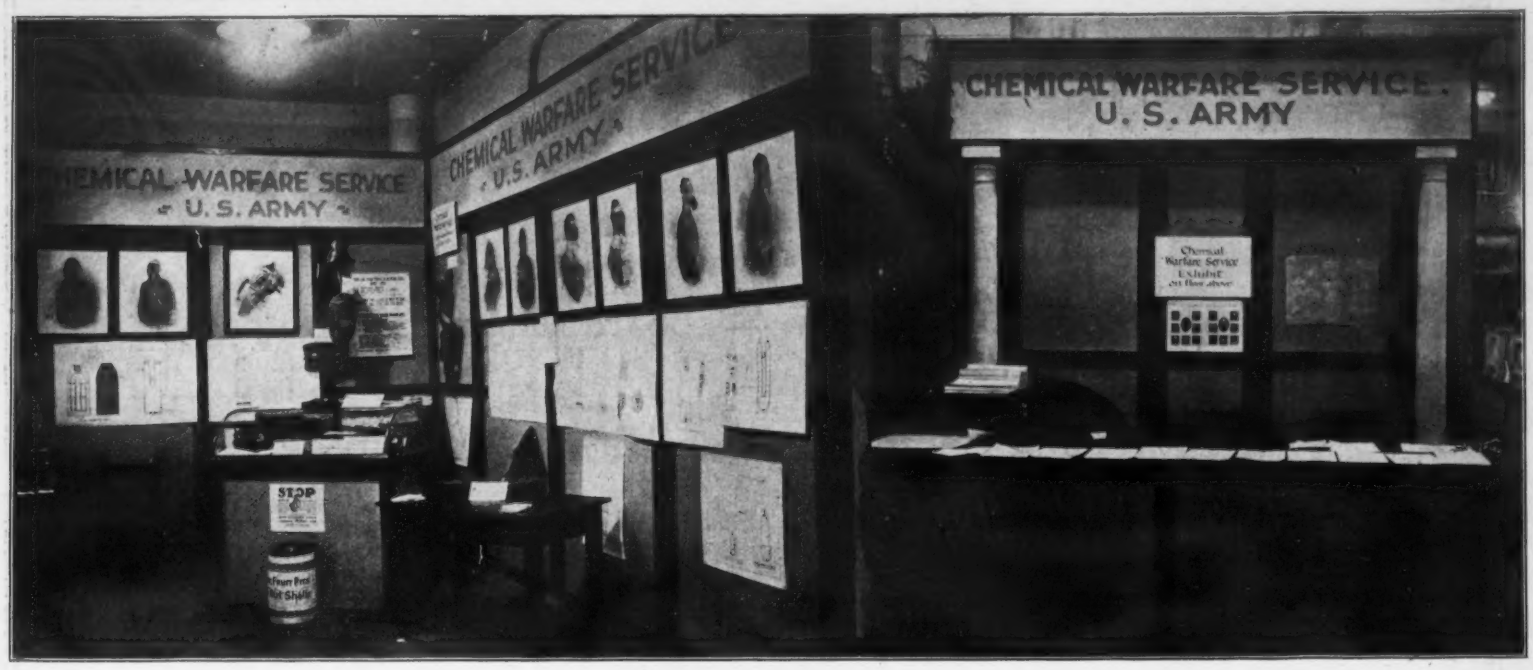
BOOTHS OF THE CHEMICAL WARFARE SERVICE OF THE UNITED STATES ARMY, WITH EXHIBIT OF GAS MASKS



Photographs by William G. Kelly, New York.

284,110. It will be noted that the aniline colors alone exceeded in value the dyestuff importations from Germany in 1914.

But the main market for which these dyes are being made, and for the permanent relief of which a great American industry has been created, is the United States market, and the way in which this has been done is deserving of a more detailed examination.

With the shutting off of the foreign sources of supply in 1914, not only was the need of an American dye industry made clear, but the manufacture of munitions and the filling of foreign orders called for coal-tar products. The manufacture of phenol or picric acid and of trinitrotoluol all demanded an immediate supply of coal-tar crudes. So the gas works, the by-product coke ovens and the tar distillers all united for increased and intensive production. I need only refer to the lists of such great companies as the Semet-Solvay Company, the United Gas Improvement Company and the Barrett Manufacturing Company as illustrating the achievements in this production of coal-tar crudes. For the increased production of benzol and toluol the Ordnance Division of the War Department has also started to establish plants for by-product coal distillation because of its special needs.

However, for the dyestuff manufacture we go from the coal-tar crudes to the "intermediates." Some of these require very special apparatus for their manufacture, and it was these that had not been made in this country prior to 1914. Our chemical apparatus manufacturers (several of whom are very well represented in this Exposition) responded to the call for this apparatus and gradually these important products, mostly new to American trade, were supplied. The tariff census of 1917 states that the production of intermediates for that year was contributed to by 117 firms, and that the production amounted to 322,650,531 pounds, valued at $106,942,918. These figures, however, involve considerable duplication, because of the use of some as a starting point in making others. That the amounts of many are very large is shown, however, by the statement published by the National Aniline and Chemical Company, that their Marcus Hook works has a producing capacity of aniline oil five times as great as the total consumption in this country prior to the war, and that this company is now the largest producer of aniline oil in the world.

Munitions Manufacture.

Of course, the manufacture of munitions, begun on Allied account and continued later by the Ordnance Bureau on our own account, means the production of numerous organic compounds on a scale totally beyound any previous experience—picric acid, trinitrotoluol, nitrocellulose and nitroglycerine for smokeless powder, fulminate powders and other preparations are manufactured by tons, but as this is a war industry and not one that will continue, we have omitted it from our discussion.

In conclusion, what is the outlook for industrial organic chemistry in the immediate future in this country? I would say that it is most encouraging. The exigencies of the war in Europe have caused a widespread search for independent sources of raw materials to be made and with very satisfactory results in many cases. Our large corporations have established research laboratories with the best up-to-date equipment and have planned real and thorough-going research in a broad, intelligent spirit which does not ask for hasty results, but emphasizes the wish for thoroughness. Our government has recognized in a very satisfactory way its need of chemical service and has thus publicly indorsed the fundamental importance of the chemist in industrial achievement. Capital has come forward willingly in support of properly planned chemical undertakings and thus made the establishment of new industries possible in a way far beyond what had been possible before the war period. Lastly, the disturbed condition of all European trade relations has made it possible for the United States to inaugurate very promising export business in quarters not previously practical or under conditions formerly distinctly unfavorable. These new achievements we have every reason to expect to continue in future, and no doubt with added momentum.

4,000 CHEMISTS WANTED AT ONCE TO AID U. S. GOVERNMENT IN SERVICE FOR THE WAR

Demand in Excess of Normal Output of Colleges—Questionnaire Circulated to Take Census of Available.

Washington, Sept. 23, 1918.

There is a demand for 4,000 chemists for service in the United States during the coming year. This figure has been obtained by a careful canvass of the field, a study of the needs of the government, and an estimate of what will be required in the way of extra work in the industrial field.

The statement of the requirements is made by Dr. E. W. Washburn, vice-chairman and secretary of the Division of Chemistry and Chemical Technology of the National Research Council, which maintains its headquarters in Washington. Of the number mentioned 2,000 are needed by the government and 2,000 in private industry. This is in addition to those who already are in service.

The analysis of the government's requirements in the line of chemical experts was made by Dr. Washburn and his associates at the request of the War Department's Committee on Education and Special Training. The Council was asked to make recommendations in relation to the steps that should be taken to furnish the supply.

Questionnaire Sent Out.

As a preliminary to the main task a questionnaire was prepared and sent to all the government agencies employing such experts. Their officials were asked to state the number sought, the kind of training that should be represented, the increase that was anticipated during the year, and the nature of any change in training that would be considered desirable. They were to be classified as working on organic, metallurgical or other branches. The results as produced by the answers to the questionnaires gave a survey of the field which will prove very valuable in the plans that are made for the future.

The 4,000 new men for chemical work means an influx considerably in excess of the normal output of the colleges. It is assumed at once that it will be impossible to furnish the entire number, but in addition to the regular graduates in the scientific courses, the chemical warfare service of the Student Army Training Corps will give considerable attention to the augmenting of the number, while plans of considerable proportions are undertaken with the object of creating a good supply in the succeeding years.

Three-Year Curriculum.

Following the general survey, at the War Department's request the Research Council has drawn up a three years' curriculum in chemical engineering, each of these being based upon a year composed of four terms of 12 weeks each. It is proposed that the first group shall be trained in one year, the second group in two years and the third group in three years. In addition there is provided a source of supply for the immediate future, to be employed by the government and the war industries.

Dr. Washburn, in describing the methods that had been adopted for the training of chemists, said of the preliminary survey:

"The analysis of the government requirements for chemists indicates that, in general, the chemists needed may, for purposes of consideration, be divided into three classes as follows:

"1. Analytical chemists, that is, men who have received sufficient training in chemistry to enable them to carry out routine analytical work under direction.

"2. Chemists with a good general training in all of the fundamental branches of the subject, and with some degree of further instruction in one of the following: (a) Physical chemistry, including electro-chemistry and metallography; (b) organic chemistry, including the chemistry of explosives; (c) food and sanitary chemistry; (d) physiological chemistry; (e) chemical engineering, including ceramic engineering, petroleum, textile, rubber, leather, etc., technology and metallurgy.

"3. Chemists qualified to carry on research work intelligently in some one of the fields listed under 2.

"Approximately one-third of the total number of chemists required will be in Class I and will be employed in routine analytical and control work."

Students' Training Corps.

The men who are to take up the work of chemical warfare under the Student Army Training Corps must get their training at the colleges and universities, and this, in the opinion of Dr. Washburn, brings these educational institutions face to face with a difficult problem. We found one college president who started preparations for housing and feeding the large number of students who would have to be cared for, and who learned that the additional facilities could not be made ready in time for the opening of the college year. He cites this incident as an example of what must be overcome generally to train the men. Dr. Washburn continued:—

"The statement received from the various government agencies concerning desirable modifications in the training of chemists may be of some interest. As might be expected, all agencies of the government emphasized the need of more thorough training in the fundamental branches of the science; that is, in inorganic, organic and physical chemistry. In addition, certain special subjects were mentioned by a number of different government agencies. For example, the various arsenals emphasized the need of more men well trained in metallurgy and metallography. The Navy Department pointed out that many of the men apparently had received no definite instruction in methods of using chemical literature or in proper methods for drawing up specifications. As might be expected, many branches of the government also pointed out the need of special courses in the chemistry of explosives. Additional numbers of (1) pharmaceutical chemists were called for by the Bureau of Chemistry and by the Chemical Warfare Service; (2) physiological chemists by the Surgeon General's Office and by the Chemical Warfare Service; (3) food and sanitary chemists by the Surgeon General's Office and the Bureau of Chemistry, and (4) ceramic chemists by the Bureau of Standards and the United States Fuel Administration.

"Although the government is providing in its own laboratories and under its own direct control for the investigation of the important research problems connected with the prosecution of the war there are many important problems still unsolved or only partially solved.

"It is hoped that the investigators of the country will be willing to lay aside for the present the lines of work in which they have been interested in the past, and to take up some war problem of a character which they can handle with the equipment and assistants at their disposal. The National Research Council is undertaking to secure as many of these problems as possible which are suitable for assignment to universities. It will also endeavor to secure from all available sources in Washington all of the unpublished information concerning the work which the government has already carried out in connection with such problems, and to transmit such information to the investigator to whom the problem is assigned.

"If any investigator who is in a position to give a substantial part of his own time to work of this character or who has adequate assistance in the way of students or research assistants will make known to the National Research Council the facilities at his disposal and the nature of the problem (whether organic, physical, physiological or analytical, etc.), which he prefers, the council will endeavor as far as practicable and as soon as possible to submit to him, through the authorities at his institution, a war problem for investigation."

WHAT CHEMISTS MUST ANSWER IN RESPONSE TO THE CHEMICAL SERVICE QUESTIONNAIRE

The following questionnaire and a franked envelope addressed to the Chemical Warfare Service of the United States Army is being sent out in accordance with the plan of the War Department to conduct a census of American chemists from the standpoint of the country's war-time need, especially important since recent developments have made it increasingly necessary to know the military status of chemists of all ages. The government is in need of immediate, accurate, and comprehensive information concerning chemists along the lines indicated in the accompanying questionnaire. The success of the census depends entirely upon the individual chemists of America. The questionnaire follows:—

QUESTIONNAIRE.

Name, present address, permanent address.

I. General.

1. Born (a) date, (b) place. 2. Age. 3. Place of birth, (a) of father, (b) of mother. 4. Are you an American citizen? 5. If naturalized, give date. 6. Are you married? 7. Is your wife living? 8. How many people are dependent upon you (a) wholly? (b) partially?

II. Training.

9. Give the names of the schools, colleges, universities, graduate schools or technical schools which you have attended, with dates of attendance, courses pursued and degrees granted. 10. State any other training you have had. 11. State fully the courses of study in which you have specialized. 12. What foreign languages do you (a) speak? (b) read? (c) write? 13. Of what technical societies are you a member?

III. Practical Experience.

14. In what foreign countries have you had experience and how much? 15. How many years of continuous experience have you had? (a) Industrial, (b) teaching, (c) other. 16. What experience have you had along executive and administrative lines? 17. State in detail your duties in your various positions. 18. Publications:—Title, publisher, date. 19. State specifically the kind of work you do best. 20. In the present emergency how and where, in your opinion, could you be of most service to your country?

IV. Service.

21. Do you desire to enter the service of the United States at once (a) in a civilian capacity? (b) in a military capacity? (Note—If you answer this question in the affirmative, answer the rest of the questions in this section in so far as they apply to your case; otherwise skip to Section V.) 22. What rank (or salary, if you desire a civilian appointment) would you accept? 23. What has been your total military experience? 24. Are you registered in the draft? 25. What is your order number? 26. What is your serial number? 27. Have you received the draft questionnaire? 28. How have you been classified? 29. Give names and addresses of three or four responsible persons (not relatives) as references, or send letters of recommendation herewith. Name, address.

V. Miscellaneous.

30. State anything else which will aid us or which you want us to know which is not covered by the questions on this folder. (Answer this question last.)

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FIFTH EXPOSITION OF CHEMICAL INDUSTRIES AT COLISEUM, CHICAGO, WEEK OF SEPT. 22, 1919.

In view of the following reasons, the Advisory Committee, meeting with the management of the Exposition, after discussion, have decided in favor of holding the fifth Exposition in the Coliseum, Chicago, during the week of September 22, 1919. This decision was unanimously and enthusiactically made.

The Grand Central Palace, in New York, will not be available, having been taken over by the United States Government for official purposes.

The chemical organizations of the mid-West, and particularly the Chicago Section of the American Chemical Society, welcome the plan with great enthusiasm.

The stimulus given by the Chemical Industries Exposition to the industries of the mid-West will be greatly felt and redound to the benefit of the exhibitors.

The Exposition organization and management will remain the same and be conducted in the same efficient, co-operating and successful manner as those in the past.

This will be the only National Chemical Industries Exposition in 1919.

Diagrams of space for the Fifth Exposition are ready at the office of the management in Grand Central Palace for reservations.

WHAT U. S. HAS DONE TO OFFSET POISON GAS WARFARE OF GERMANS BY NEW GASES

Major-Gen. Wm. L. Sibert, Director of Chemical Warfare Service, Tells of Accomplishments.

Washington, Sept. 28, 1918.

What the United States has done to offset the poison gas warfare of the Germans, the adoption of "antidotes," the equipment of the expeditionary forces with gas masks, the development of more powerful gases by the chemical genius of America, are told in a press interview by Maj.-Gen. William L. Sibert, director of the Chemical Warfare Service. He says:—

"The use of gas in war has grown so fast that it has now become almost strategical in its scope. It was first used in cylinders, making a gas cloud. Its success depended entirely upon the direction and the force of the wind. If the wind was too strong your gas was dissipated and scattered and soon lost its toxic character. This uncertainty as to the use of gas led to its being used in artillery shells, where it could be placed accurately. The shells were first used in the neutralization of enemy batteries and afterwards used in barrages, that is, to try to gas the men all along the line during the attack. This character of use of gas lasted until last spring, when the Germans suddenly increased materially the use of gas. Evidently they had been manufacturing it all winter and had accumulated a large quantity. They adopted the plan of gassing large areas, especially with mustard gas, and in gassing important transportation centers, sometimes 8 or 10 miles to the rear of the line to be attacked. That gives you a general idea of the growth of the use of gas.

Vital Importance in War.

"A nation that has not developed the manufacture of toxic gases and the necessary appliances for administering it to the enemy is terrifically handicapped in warfare. In fact, a nation without toxic gas, and without means of administering it, and without protection from it, will be almost at the mercy of its adversary. The Chemical Warfare Service involves both the offensive and defensive questions that arise with troops in the field, and there is that continual struggle between the offense and the defense that there has been between the high-power gun and armor on the ship. The development of the substance in the laboratory is immediately followed by a search for an antidote or some way to defend against it. Generally we know the antidote before we know whether it is practicable to manufacture in quantity a new substance. It takes months ordinarily from a chemical formula as developed in the laboratory to the production of that gas in quantity.

No Use in Peace.

"Poisonous gases have no peace use and consequently you find no appliances ready for its manufacture and no approved process for such manufacture, and in any nation where there has not been much chemical development the manufacture of gas in quantity and quickly is a difficult undertaking. Chemical manufacture of dyestuffs involves machinery more nearly similar to that in gas development than any other form of chemical manufacturing. To this country the problem of manufacturing gas in quantity was a difficult one. We had all the necessary raw materials, but our lack of general manufacture of chemicals has necessitated the development from the ground up of machinery that must be had. However, our people have met the situation and we are actually producing gas in quantity and are actually shipping gas shells abroad.

"The experience of this war shows clearly that the nation that does not study during peace times all the war problems, including chemical warfare, is at a disadvantage for the first two or three years of a war.

Offensive and Defensive Divisions.

Our two main divisions are the offensive and defensive divisions—that is, our two main production divisions. The defensive division comprises the manufacture of gas masks, protective suits, dugout blankets, alarm apparatus, etc. The American gas mask is, I am quite sure, better than that produced by any other country, and we are continually improving it. So our people can rest assured that our soldiers in France have at least as good a protection as those of any other nation.

The offensive side of gas warfare involves not only the manufacture of gas and other toxic substances and the filling of shells and other containers with such substances, but it involves the operation of gas troops. The function of the troops is to deliver gas to the enemy in all ways except by high-power artillery; that is, these gas troops carry out the cloud attacks, they operate the projecors or light mortars that throw shells filled with large quantities of gas. In other words, the mobile administering of gas is done by the gas troops.

Two Types in Use.

The two characteristic types of gases in use are mustard gas and phosgene. One is a persistent and the other is a non-persistent gas. All of the armies are using these gases—allies and enemy. There is a strong tendency toward standardization.

The danger of entering cities from which the Germans have been driven because these places are often left steeped in gas, was explained by Gen. Sibert in reply to questions. He said:—

Mustard gas lasts a long time; it takes days to get away, and if an area is soaked with it, it is not safe for troops to go in for several days without their gas masks on, and if they stay in any length of time the stuff will go through the clothing and burn the flesh.

New Gases.

Regarding the activities of chemists in the service in discovering the composition of new gases used by the Germans, Gen. Sibert explained:—

We know all the gases that the Germans have used in the field, and we knew all those substances before. Mustard gas has been known for twenty-five or thirty years. Of course, phosgene is well known. Practically all of these substances have been discovered in the laboratory and have never gone any farther. The "duds," the shells that do not explode, are always picked up. We have a laboratory in France, and, of course, the other allies have laboratories, and we will know within a day or two after any engagement what kind of gas they use.

That the American forces are being supplied with a sufficient number of gas masks of American manufacture.

Through a printer's error in the notice of the booth of the Diamond State Fibre Company, of Bridgeport, Conn., in the issue of the Reporter of September 23, the company's representatives were badly jumbled. This company exhibited vulcanized fiber sheets, rods and tubes, and was represented by Jos. Ranck, C. M. Bogert, F. T. Cantwell, L. T. McCloskey and C. H. Reeves.

Merck & Company's Chemical Exhibit.

SULPHUR PRICES

Fixed in Italy for Sicily and on the Continent.

New maximum prices for Italian raw and worked sulphur were fixed by a recent ministerial decree, according to Consul-General David F. Wilber, Genoa. The new schedule consists of two categories—prices in Sicily and prices on the Continent and in the islands other than Sicily.

The maximum prices in Sicily for worked sulphur per quintal of 220.46 pounds are:—Refined, in bricks, packing extra, 58.37 lire (at normal exchange the lira is worth 19.3 cents); refined, in sticks, 60.37 lire; sublimated, pure, 70.31 lire; raw ground, 53.50 lire; refined ground, 60 to 65 per cent. of fineness, 64.51 lire; 65 to 70 per cent., 65.14 lire; 70 to 75 per cent., 65.77 lire; refined sifted, 75 to 80 per cent., 66.69 lire; 80 to 85 per cent., 68 lire; 85 to 90 per cent., 69.31 lire. In the prices for sulphur in powder the value of the packing canvas, to be given separately in the invoice, is not included.

The prices for worked sulphur are for goods at Catania, Licata, Porto Empedocle, and Termini Imerse, f. o. b. or on car at station. For sales in other localities of Sicily, the prices of worked sulphur are to be increased by the costs of carriage, as shown by invoice, and loss by diminution, which can not exceed 1 per cent. and will be applied only to refined sulphur in bricks.

On the Continent and in the other islands the prices for worked sulphur are those indicated above, increased by the costs of carriage and of the loss by diminution. For ground sulphur mineral the following f. o. b. prices are established:—Mineral containing from 25 to 30 per cent. of sulphur, 14.25 lire per quintal; 30 to 35 per cent., 16.60 lire; 35 to 40 per cent., 18.96 lire; 40 to 45 per cent., 21.32 lire; 45 to 50 per cent., 23.68 lire. These prices do not include the value of the packing canvas.

For the resale of worked sulphur and ground sulphur mineral a margin of profit is allowed the reseller not exceeding 2 per cent. for lots of ten quintals or more nor 4 per cent. for lots of less than 10 quintals. Sulphur of over 90 per cent. fineness, washed sulphur, sulphur for medicinal use, and sifted flowers of sulphur are not contemplated in the present decree.

To the decree is annexed a list of normal prices for unworked sulphur, which is made the basis of the new prices for raws. In Sicily the prices for raw sulphur are those fixed in this list, plus a commission of 5 centesimi in favor of the Association for the Sicilian Sulphur Industry. On the Continent and in the other islands the list prices for raw sulphur are further increased by the costs of carriage to destination, as shown by the invoice or established by calculation (on the basis of the railway tariff increased by 20 per cent.), as well as loss by diminution not to exceed 2 per cent.

POTASH SALTS

Output in Spain Under Full Control of the Government.

By a law dated July 24, 1918, the Spanish Government assumes supervisory control of all national mining concessions already granted or to be granted producing potash salts and other substances entering into the manufacture of fertilizers. Work in such mines will be under the supervision of the mining inspector of the district in which the concessions are located.

To survey and exploit the already discovered sources of potash in the provinces of Barcelona and Lerida owned by the government, an appropriation of 80,000 pesetas ($15,296 at 5.23) has been authorized by the law above referred to.

Whenever the total national production of potash salts reaches 50,000 tons or more per year, a special office will be created to regulate such production, and the quantities and proportion to be produced by each mine will be determined by the office in question, and work in such mines can not be diminished or stopped without the assent of the mining inspector of the district.

POTASH IN BRITAIN.

Hopes Believed Justifiably Placed in Yield from Blast Furnace Dust.

London, Sept. 5, 1918.

The British Board of Trade in its official journal this week discusses the potash situation, with special reference to the efforts already made to make this country independent of German supplies.

The feature of the article of particular interest is the detail of the process conjointly devised by the North Lincolnshire Iron Company (Limited), and British Cyanides (Limited), which process was referred to in a recent Reporter London dispatch on the annual meeting of the latter company.

In the autumn of 1914 an advertisement was inserted in the technical press by the North Lincolnshire Iron Company offering for sale the dust collected by their newly installed gas cleaning plant from their blast furnace gases. This advertisement attracted the notice of the British Cyanides Company, who made arrangements with the North Lincolnshire Iron Company by which a joint investigation upon the possibilities of producing the dust and working it up into commercial products was to be conducted. In April, 1915, the first investigations were made, but it was not until early in 1916 that direct experiments could be begun.

After a long period of painstaking work Mr. Kenneth M. Chance, a director of British Cyanides, developed his idea that the addition of a small proportion of common salt (sodium chloride) to the charge of the furnace would release the potash present in the ore and cause it to be volatilized with the emerging gases as potassium chloride.

Large scale tests, conducted during a considerable period, led to the conclusion that this process was not only successful in releasing very much larger quantities of potash in the dust, but also that it was in no way deleterious either to the quantity of the pig iron produced or to the lining of the furnaces.

As a result of these experiments, it was estimated that it would be possible to recover by suitable means a maximum of 50,000 tons of potash salts per annum from blast furnace dust alone—enough practically to meet the demands of this country.

The great advantage claimed for this dust as a raw material for potatsh supplies lies in the fact that the cost of its recovery may be regarded as negligible; clean gas, the main product of the necessary installation, is in itself valuable, and the cost of removing the impurities is, therefore, chargeabe to the gas. The cost of the common salt used (entirely chargeable to the potash), is not a great amount..

To deal with blast furnace dust as a raw material the British Potash Company was formed. One-half of the shares in this company is held by the British Government, and the other half by the British Cyanides Company (Limited), the North Lincolnshire Iron Company (Limited), and John Lysaght (Limited). There are three directors representitng the private interests and three in the government interest.

A factory has been erected at Oldburg, near Birmingham, designed to turn out 400 to 500 tons of potassium chloride per week, and it is part of the scheme to erect a conversion factory, where the chloride, not needed for agricultural purposes, may be converted into other salts.

Other factories in the neighborhood of blast furnaces are in contemplation; particularly hopes are entertained of large quantities of potash from the important Cleveland iron district.

Large quantities of potash can also be collected from the fume and dust of cement kilns. The potash, of course, is fed into the kiln in the raw material. The heat developed volatilzes the potash, which, although only a very small proportion of the charge becomes available in a quantity, owing to the enormous mass of material dealt with in the aggregate. Potash is now being sold by some cement manufacturers, who before their attention was called to the matter by the Potash Production Department of the Ministry of Munitions had no idea that a valuable material was theirs for the collecting.

The official account from which the above is drawn also refers to other sources of potash. From Scotch and Irish kelp most of the chlorate of potash utilized by the match manufacturers is drawn. Another big source of supply for carbonate is suint liquor, the soapy liquor resulting from the washing of greasy wool. The problem of recovering potash from feldspar is still under investigation, but it is not so easy as the extraction from blast furnace dust.

On the whole, the Potash Production Branch regards the present outlook as very hopeful, and adds:—"Each week that passes renders Great Britain more independent of Germany's potash and more able to treat with disregard Germany's continual threats of holding other nations to ransom on potash."

Importation of Medicinal Proprietary Articles Into United Kingdom Likely to Be Permitted on Basis of 50 Per Cent. of 1917 Importations.

London, Sept 2, 1918.

By September 6 the Owners of Proprietary Articles Section of the London Chamber of Commerce will be in possession of lists of proprietary articsles for which the members desire permits to import. The Department of Import Restrictions has, in response to requests for concessions, asked the chamber to submit such lists in a consolidated form, together with an estimate of the tonnage they represent. The idea of the department, it is believed, is to make a concession on the basis of 50 per cent. of the importation of the medicines in 1917 as represented by the tonnage.

THE AULT and WIBORG COMPANY

CINCINNATI, OHIO, U.S.A.

Intermediates Dyestuffs Chemicals

Chrysophenine
Auwico Chrysamine G
Direct Yellow P
Primuline
Triazol Fast Orange G
Benzo Orange R
Auwico Direct Orange RR
Triazol Brown Sooo
Triazol Brown GG
Triazol Brown B
Auwico Direct Violet B
Auwico Direct Violet R
Direct Violet BS
Auwico Direct Bordeaux COV
Auwico Direct Bordeaux GV
Direct Bordeaux A
Auwico Direct Green G
Auwico Direct Green B
Auwico Direct Green BB
Congo Red
Benzo Purpurine 4B conc.
Benzo Purpurine 10B
Auwico Fast Rose B
Auwico Fast Rose G
Direct Sky Blue FFo
Direct Blue BH
Direct Blue R
Direct Blue BX
Direct Blue XR
Auwico Direct Blue 4R
Auwico Direct Blue 4B
Auwico Direct Blue BB
Direct Black
Auramine O
Phosphine Substitute G
Bismark Brown Y
Bismark Brown R
Chrysoidine Y
Chrysoidine R
Methyl Violet 4B
Methylene Gray B
Methylene Gray R

Malachite Green
Malachite Green Crystals
Fuchsine
Fuchsine Crystals
Methylene Blue O
Methylene Blue OOO
Fast Navy Blue SR
Victoria Blue B
Leather Black R
Leather Black G
Sulfur Yellow G
Sulfur Tan R
Sulfur Cutch
Sulfur Black
Sulfur Black Blue
Eosine Y
Eosine B
Erythrosine
Violet Modern
Alkai Blue
Indigo Natural
Indigo Synthetic 20%
Indigotine Natural
Indigotine Synthetic
Chrome Yellow G
Alizarine Orange W
Chrome Khaki BX
Chrome Brown P
Chrome Red BS
Chrome Bordeaux W
Chrome Red 3B
Chromotrope Blue
Chrome Brilliant Blue BS
Chrome Green FS
Chrome Black SB
Chrome Blue Black
Chrome Yellow D
Fast Light Yellow 2G
Naphtol Yellow
Tartrazine Conc.
Azo Yellow
Metanil Yellow

Croceine Orange G
Acid Orange II
Ponceau GG
Acid Scarlet 2R
Acid Scarlet 4R
Croceine 3BX
Fast Red A
Azo Crimson
Amaranth
Acid Bordeaux W
Cloth Red GO
Azo Rhodine 2GN
Azo Fuchsine 6B
Azo Fuchsine 8B
Azo Fuchsine
Patent Blue
Turquoise Blue
Acid Blue RR
Azo Dark Blue SS
Acid Navy Blue B
Acid Navy Blue BN
Azo Navy Blue
Sulfocyanine 3R
Induline NN
Acid Violet Bluish
Victoria Violet 4BS
Naphtol Green B
Wool Green S
Acid Green B
Acid Green GG
Acid Brown R
Acid Black G
Naphtylamine Black D
Norwood Black 4B
Norwood Black 6B
Liberty Red Dry
Liberty Red Pulp
Norwood Black 2B
Sulfur Green
Lithol Rubine
Crumpsall Yellow
Sudan III

Nitro Benzol
Aniline Oil
Aniline Salt
Diethylaniline
Dimethylaniline
Para Nitro Acetanilid
Para Amido Acetanilid
Paranitraniline
Para Phenylene Diamine
Meta Phenylene Diamine
Meta Dinitro Benzol
Metanitraniline
Meno Chlor Benzol
Dinitro Phenol
Ortho Nitro Chlor Benzol
Para Amido Phenol Base
Para Amido Phenol Hydrochloride
Para Nitro Phenol
Para Nitro Chlor Benzol
Resorcine
Di Nitro Chlor Benzol
Amido Azo Benzol Hydrochloride
Amido Azo Toluol Hydrochloride

Sodium Naphtaline Beta Sulfonate
Ortho Toluidine
Meta Nitro Para Toluidine
Para Nitro Ortho Toluidine
Beta Naphtylamine 1 Sulfonic Acid
1 Amido 2 Naphtol 4 Sulfonic Acid
Diphenylamine
Benzidine Base
Benzidine Sulfate
Tolidine
Xylidine
Benzaldehyde
Benzyl Chloride
Naphtaline Disulfonic Acid 2:7
2 Naphtol 1 Sulfonic Acid
Alpha Nitro Naphtaline
Tetra Methyl Diamine Diphenyl Methane
Alpha Naphtylamine
Primuline
Para Toluidine
Tobais Acid 2:1

Phenyl Alpha Naphtylamine
Beta Naphtol
H Acid 1:8:3:6
G Acid 2:6:8
R Salt 2:3:6
Para Azoxy Ortho Toluidine
Di Nitro Toluol
Meta Xylidine
Mixed Nitro Toluol
Mixed Xylidine
Bayer Salt 2:8
RG Salt 1:3:6
Schaeffer Salt 2:6
Cleve Acid 1:5
Laurent Acid 1:5
Neville Winther Acid 1:4
Broenner Acid 2:6
Sulfanilic Acid
Naphtionic Acid 1:4
Anthranilic Acid
Gamma Acid 2:6:8
Metanilic Acid
Acetanilid
Beta Oxy Naphtoic Acid
Ortho Nitro Toluol
Para Nitro Toluol

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